



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

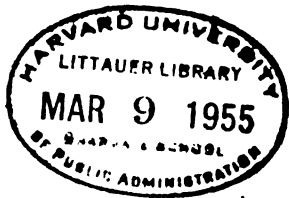
We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

^A
~~Gen. Doc. 70.444~~
Can Doc 246.10



Bound

CANADA

REPORT

Can Dog 10.77.5

OF THE

MINISTER OF PUBLIC WORKS

ON THE

WORKS UNDER HIS CONTROL

FOR THE

FISCAL YEAR ENDED JUNE 30

1906



*Submitted in Accordance with the Provisions of Chapter 36, Section 37,
of the Revised Statutes of Canada.*

VOL. I

PRINTED BY ORDER OF PARLIAMENT



OTTAWA

PRINTED BY S. E. DAWSON, PRINTER TO THE KING'S MOST
EXCELLENT MAJESTY

1907

[No. 19—1907.]

RECEIVED
LIBRARY
SACHS LITS. ST. 1
1940



11/24/41

*To His Excellency the Right Honourable Sir Albert Henry George, Earl Grey,
G.C.M.G., &c., Governor General of Canada.*

MY LORD,

I have the honour to lay before Your Excellency the Report of the Department of Public Works of Canada, for the Fiscal Year ended June 30, 1906.

I have the honour to be,

My Lord,

Your Excellency's most obedient servant,

SYDNEY FISHER,

Acting Minister of Public Works.

OTTAWA, January 11, 1907.

CONTENTS

VOLUME I

- Part I.—DEPUTY MINISTER'S REPORT.
- " II.—ACCOUNTANT'S REPORT.
- " III.—CHIEF ARCHITECT'S REPORT.
- " III.—APPENDIX 'A,' INSTRUCTIONS TO COMPETING ARCHITECTS FOR DESIGNS OF NEW BUILDINGS, SUSSEX STREET, OTTAWA.
- " IV.—CHIEF ENGINEER'S REPORT.
- " IV.—APPENDIX 'A,' GEORGIAN BAY SHIP CANAL SURVEY.
- " IV.—APPENDIX 'B,' GEODETIC SURVEYS.
- " V.—GENERAL SUPT. OF TELEGRAPHS' REPORT.
- " VI.—COLLECTOR OF REVENUE'S REPORT.
- " VII.—MISCELLANEOUS REPORTS.

VOLUME II

CONTAINS ALL REPORTS ISSUED BY THE INTERNATIONAL WATERWAYS COMMISSION TO JANUARY 1, 1907.

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
B							
Bass River, N.S.		14		7			
Bathurst, N.B., public building		7, 27					
Battery Point, N.S.		14		7			
Battleford, N.W.T., public buildings		11, 31					
" " " bridge		24					
Baxter Harbour, N.S.		14		8			
Bay of Fundy, telegraph		25			8, 45		
Bayfield, N.S.		14		8			
" " " Ont.		21		156			
Baysville, Ont.		21		157			
Bay St. Lawrence, N.S.		14		8			
Bear Cove, N.S.		14		9			
Bear River, N.S.		14		9			
Beaverton, Ont.		21		157			
Beauharnois, P.Q.		18					
Beckerton, N.S.		14		10			
Belle Isle, telegraph		25					
Belle River, Ont.		21		157			
Belleville, Ont., public building		9, 29					
" " " harbour		21		231			
Belœil, P.Q.		18		114			
" " " slides		23					
Bensfort, Ont.				158			
Benoit's Cove, N.S.		14					
Berlin, Ont., public building		9, 29					
Bersimis, P.Q., telegraph		9					
Berthier (en bas), P.Q.		18		114, 228			
Berthierville, P.Q., harbour		18					
" " " public building		8, 28	10				
Bic, P.Q.		18		114			
Big Lorraine, N.S.				10			
Big Falls, N.B.		17					
Big Sluice, N.S.		14		10			
Black Brook, N.B.		16		95			
Black River, N.B.				86			
" " " slides		23		288			
Black Point, N.S.		14					
Black Rock, N.S.		14		10			
Blanche River, Ont.		21		158			
Blanche Shoals, P.Q.				233			
Blenheim, Ont.		21					
Blount, Ont., post office		29					
Blind River, Ont.		21		158			
Blomidon, N.S.		14					
Blooming Point, P.E.I.		16		74			
Boularderie, N.S.		15		11			
Boucherville, P.Q., public building		8					
Boisdale, N.S.		14		10			
Bourgeois Inlet, N.S.		14		11			
Bosse Island, N.B.		17					
Bowmanville, Ont., public building		9, 29					
" " " harbour		21		231			
Bracebridge, Ont.		21		159			
Brampton, Ont., public building		9, 29					
Brandon, Man., public building		11, 31	30				
" " " experimental farm		11, 31					
Breton Cove, N.S.				11			
Brantford, Ont., public building		9, 29					
Bridgeburg, Ont., public building		9, 29	17				
Bridgewater, N.S.		14		12			
Bridges and roads				294			
British Columbia, dredging				277			
" " " dredging plant				278			
" " " harbours and rivers	6	23		181			
" " " public building		12, 32	35				
" " " telegraphs		25			9, 54		
Broad Cove Marsh, N.S.		14		12			
Brockville, Ont., public buildings		9, 29					
Bromptonville, P.Q.		18		115			
Bronte, Ont.		21		159			
Bruce Mines, Ont.		21		159			
Bryson Bridge, Ont.		24		295			
Buckhorn, slides				293			
Buckingham, P.Q., public building		8, 28					
Buctouche, N.B.		17		86			
Burford, Ont., armoury		9, 29	17				
Burleigh Rapids, slides				292			
Burlington, N.S.				12			
Burlington Channel, Ont.		21		159			
Burnt Church, N.B.		17		87			

INDEX

x

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
C							
Cable Ship <i>Tyrian</i>	13	25			9		
" telegraph tariff.....					35		
Calgary, N.W.T., public buildings.....		11, 31	34				
Callender, Ont.....		21		180			
Campbell's Cove, P.E.I.....		16		74			
Campbell River, B.C.....		23		181			
Campbellton, N.B., public building.....		7, 27	5				
" wharf.....		17		87, 192			
Canning, N.S.....		14		13			
Canne de Roches, P.Q.....		18		115			
Canso, N.S., public building.....		7	3				
Canton Fabre, P.Q.....		18		121			
Cap à Corbeau, P.Q.....		18		113			
Cape Breton, N.S., telegraph.....		25			7, 41		
Cape Cove, P.Q.....		18					
Cap des Rosiers, P.Q.....		19					
Cape Negro Island, N.S.....		14		13			
Cape Tormentine, N.B.....		17		89			
Caplan, P.Q.....		19		115			
Carasquet, N.B.....		17		90			
Carstakers, &c.....		27					
Carleton, N.B., public building.....		7, 27	8				
Carleton Place, Ont., public building.....		9, 29					
Cardstone, N.W.T., public building.....		11					
Carduff, N.W.T., public building.....		11, 31					
Carillon, slide.....				236			
Cattle quarantines.....		34					
Cayuga, Ont., public building.....		9, 29					
Cedar Hall, P.Q.....		8					
Cedars Wharf, N.B.....		17		172			
Cement laboratory.....		25		298			
Centre Burlington, N.S.....		14					
Chambord, P.Q.....		18		115			
Chambly, P.Q.....				228			
Charles's Cove, N.S.....		14		13			
Chapeau bridge.....		24		296			
Champlain, P.Q.....		18		116			
Chance Harbour, N.B.....		17		91			
Charlottetown, P.E.I., public building.....		7, 27					
" dredging.....		16		194			
Chateauguay, P.Q.....		20					
Chateau Richer, P.Q.....		18		116			
Chatham, N.B., public building.....		7, 27					
" harbour.....		17		91			
" Ont., armoury.....		9, 29	17				
" public building.....		9, 29	17				
Chaudiere Bridge, Ottawa.....				294			
Chebogue, N.S.....		14		14			
Chegoggin, N.S.....		14		14			
Cheticamp, N.S.....		14		15			
Cheverie, N.S.....		14		15			
Chicoutimi, P.Q., public building.....		8, 28	10				
" wharf.....		18		117, 228			
" telegraph.....					19		
Chief Accountant, report.....		1					
" Architect, report.....			1				
" staff.....		25					
" Engineer, report.....				3			
" staff.....		25					
" Officers.....							
Chilliwack, B.C.....		23		182			
China Point, P.E.I.....		16		75			
Chockfish, N.B.....		17		92			
Church Point, N.S.....		14		16			
Clarks Harbour, N.S.....		14		16			
Clarke City, P.Q.....				118			
Clerk of works, salaries.....		25					
Clifton, N.B.....		17		109			
Clinton, Ont., public building.....		9, 29					
Coaticook, P.Q., public building.....		8, 28	10				
Cobourg, Ont., public buildings.....		9, 29					
" harbour.....		21		160			
Cockburn Island, Ont.....		21		160			
Colborne, Ont.....		21		161			
Colchester, Ont.....		21		161			
Collector of Revenue.....						1	
Collection of slides and booms dues.....		23					
Collingwood, Ont.....		21		161			
Columbia River, B.C.....		23		182, 277			
Colwood, B.C.....		32					

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
C.							
Commissions.....		18					
Como, Que.....		23		184			6
Contracts let, &c.....		18					
Coquitlam River, B.C.....		9, 29					
Corner of the Beach, Que.....		18					
Cornwall, Ont., public building.....		18					47
Correspondence, official.....		23					
Coteau Landing, P.Q.....		14		287			
Coulange River, P.Q.....		14		17			
Country Harbour, N.S.....		23		184			
Courtney River, B.C.....		16		75			
Cove Head, P.E.I.....		14		17			
Cow Bay, N.S.....		14		18			
Cow Bay Run, N.S.....		14		39			
Craigmore, N.S.....		31					
Craik, N.W.T., immigration shed.....		15		61			
Cranberry Head, N.S.....				181			
Craven Dam, N.W.T.....		16		77			
Crapaud, P.E.I.....		14		18			
Cribbins Point, N.S.....		18		119			
Cross Point, P.Q.....		14		19			
Cross Island, N.S.....		21		162			
Crowe's Landing, Ont.....		14					
Culloden, N.S.....		21		162			
Cumberland, Ont.....		14		19			
Cunningham Point, N.S.....							
D.							
Dalhousie, N.B., harbour.....		17		92, 192			
" public building.....		7, 27	5				
Dartmouth, N.S., public building.....		7, 27					
Dauphin, Man., public building.....		11, 31	30				
Davidson, N.W.T., immigration building.....		11, 31					
Dawson, Y.T., public buildings.....		32	38				
" telegraph.....					32, 58		
Delta, Man., wharf.....		22					
Delaps Cove, N.S.....		14		20			
Departmental photographer.....		25					
Depot Harbour, Ont.....		21		162			
Deputy Minister's report.....	1						
Descentes des Femmes, P.Q.....		19		129			
Deschambault, P.Q.....		18		119			
Descousse, N.S.....		14		20			
Deseronto, Ont., public building.....		9, 29					
Desjardins, P.Q.....		18		120			
Desisle, P.Q.....		19		181			
Devil's Island, N.S.....		14		21			
Devil's Rock, N.B.....		17					
Digby, N.S., harbour.....		14		21			
" public building.....		7, 27					
Dipper Harbour, N.B.....		17		93			
D'Israeli, P.Q.....		18		120			
Doucet's Landing, P.Q.....		18					
Douglastown, P.Q.....		18					
Dredging and plant.....	7	23		198			
Dredging, British Columbia.....				185			
" Maritime provinces.....				191			
" New Brunswick.....				192			
" Nova Scotia.....				191			
" Ontario.....				228			
" operations.....				190			
" plant, names, &c.....				280			
" Prince Edward Island.....				194			
" Quebec.....				228			
Drum Head, N.S.....		14		23			
Drummondville, P.Q., public building.....		8, 28	10				
Dry docks.....				285		7	
Duck Lake, N.W.T., immigration building.....		31					
Dumfries, N.B.....		17					
Dumoine River, slides.....		23		288			
Duncan River, B.C.....		23		184			
Dundas, Ont., public building.....		9, 29					
Dundee, P.Q., custom house.....		28					
Dunnet's Landing, Ont.....		21		162			
Durham, N.B.....		17		93			
Dyer's Bay, Ont.....		21		163			

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
E							
East Berlin, N.S.		14		24			
East Chessecook, N.S.		14		24			
East Templeton, P.Q.		18					
East Selkirk, Man., immigration building.		31					
Eboulements, P.Q.		19		228			
Economy, N.S.		14		24			
Echo Bay, Ont.		21		163			
Edgetts' Landing, N.B.		17		93			
Edmonton, N.W.T., bridge.		24					
" public buildings.		11, 31	34				
" telegraphs.		25					
Eel Cove, N.S.		15		33			
Elkhorn, Man., immigration building.		31					
Emerson, Man., public building.		11, 31					
Employees, graving docks.							37
" salaries of.		25					
" slides and booms.							39
Engineers, firemen.		27					39
Engineer (chief), report.				1			
" (staff, salaries, &c.)		25					
English River, P.Q.		18		120			
Estasoni, N.S.		14		25			
Escuminas, P.Q.		18		121			
Escuminac, N.B., telegraph.		25					
Esquimalt, B.C., graving dock.		23		285		6, 13	
Esquimaux Point, P.Q.		18					
Expenditure.	3	26					
F							
Faber, P.Q.		18		121			
Father Point, P.Q.		18		122			
Father Point, P.Q., telegraph.		25					
Farnham, P.Q., public building.			10				
Fairford River, Man.		22					
Feltsar, N. S.		14		25			
Fernie, B.C.		12					
Fielding, W. S., dredge.							
Finlay Point, N.S.		14		25			
Flint's Landing, P.Q.				126			
Fort Dufferin, N.B.				94			
Fort Lawrence, N.S.		14					
Fort Saskatchewan, N.W.T., telegraphs.		25					
Fort William, Ont., harbour.		21		163			
" public buildings.		9, 29					
Fraser River, B.C.		23		185			
Fraserville, P.Q., harbour.				142			
" public building.		8, 28					
Fredericton, N.B., public buildings.		7, 27	6				
Freeport, N.S.		14		25			
Frenchman's Bay, Ont.				233			
Fruids Point, N.S.		14		26			
G							
Gabarus, N.S.		14		26			
Gagetown, N.B.		17					
Galt, Ont., public building.		9, 29	17				
Gananoque, Ont., public building.		9, 29					
Gateway, B.C., cattle quarantine.		12					
Gatineau River, slide.		23		287			
" Point, P.Q.		18		122			
Geodetic Surveys.				310			
Georgeville, N.S.		14		27			
Georgian Bay Canal, survey.	9	25		302			
Gimli, Man.		22		181			
Glace Bay, N.S., harbour.		14					
" public building.		7					
Glenwood, N.B.		17		193			
Goderien, Ont., harbour.		21		163			
" public building.		9, 29					
Golden Windermere, B.C., telegraph.		25			30, 56		
Goose Bay, N.S.		14		28			
Graham, P.Q.		18					
Graham's Bay, Ont.		21		165			
" Pond, P.E.I.		16		76			
Granby, P.Q., public building.		8, 28	11				

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
G.							
Grand Bend, Ont.		21		165			
Grandes Bergeronnes, P.Q.		18		123			
Grande Entré, P.Q.		19		123			
Grand Etang, N.S.		14		28			
Grand Falls, N.B.		17					
Grand Méchins, P.Q.		18					
Grand Narrows, N.S.		14		29			
Grand Pabos, P.Q.		18					
Grand River, Ont., bridge.				296			
" P.E.I.		16		76			
Grande Rivière, P.Q.		18					
Gratuities paid.		25					
Graving docks.	8					7	
Graving dock officials.							37
Gray, Major H. A., gratuity.		25					
Gray, W. H., gratuity.		25					
Great Salmon River, N.B.		17		95			
Green River, N.B.		17					
Grindstone, P.Q.		19		123			
Grondines, P.Q.		18		124			
Grosse Isle, P.Q., quarantine.		8					
" telegraphs.		25			47		
" wharf.		18					
Grove Point, N.S.				29			
Guelph, Ont., public buildings.		9, 29	17				
Gull Island, N.S.		14					
Guysboro', N.S., public building.		7, 27					
H							
Haggerty's piers, P.E.I.		16		77			
Halleybury, Ont.		21					
Half Island Cove, N.S.		14		30			
Halifax, N.S., public buildings.		7, 27	8				
" graving, dock.		14					
Halls Harbour, N.S.		14		30			
Hamilton, Ont., public buildings.		9, 29					
" harbour.		21		166, 231			
Harbours and rivers generally.	5	23					
Harrigan's Cove, N.S.		14					
Hawkesbury, N.S.		14					
Hawkesbury, Ont.		21					
" public building.		9, 29	18				
Head River, Ont.		21		166			
Heating public buildings.		27					
Hickey's piers, P.F.I.		16					
High Water, N.B.		17					
Hilts Narrows, N.S.		14		31			
Hochelaga, P.Q., public building.		8, 28					
Holland River, Ont.		21					
Honora, Ont.		21		167			
Hopewell Cape, N.B.		17					
Hudson, P.Q.		18		124			
Hull, P.Q., public building.		8, 28					
" wharf.		18					
Hunt's Point, N.S.		14		31			
Hurd's Point, P.E.I.		16		77			
I							
Iberville, P.Q., public building.		8					
Indian Head, N.W.T., experimental farm.		11, 31					
Indian Harbour, N.S.		14		32			
Indian River, Ont.		21		231			
Ingersoll, Ont., public building.		9, 29					
Innisfail, N.W.T., immigration building.		31					
Inverness, N.S.		7					
Iona, N.S.		14		32			
International Waterways Commission.	9	25					
Irish Cove, N.S.		15		33			
Iroquois River, N.B.		17					
Island of Orleans, P.Q.				228			
" telegraph.		25			47		
Isle aux Coudres, P.Q., telegraph.		25					
Isle aux Grues, P.Q.							
Isle aux Morpions, P.Q.				228			
Isle aux Noix, P.Q.		18		228			
Isle d'Alma, P.Q.				128			
Isle Perrot, P.Q.		18		124			
Isle Verte, P.Q.		28		125			

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
J							
Javvins Island, N.S.		15		33			
Jeddore (oyster pond), N.S.		15		33			
Jeannette's Creek, Ont., wharf		21		174			
Jenkins Cove, N.B.		17		193			
Jersey Cove, N.S.		15		33			
Joggins Mines, N.S.		15		34			
Joliette, P.Q., public building		8, 28	11				
Jordan Harbour, Ont.				167			
K							
Kaministiquia River, Ont.				163			
Kamloops, B.C., public buildings		12, 32	35				
Kamouraska, P.Q.		20		148			
Kelley's Cove, N.S.		15		34			
Kelowna-Penticton, B.C., telegraphs		25					
Kennedy Lake, B.C.		23		181			
Kenora, Ont., public building		9, 29					
Kentville, N.S., public building		7, 27					
Kicking Horse River, B.C.		23					
Kiers Shore, P.E.I.		16		78			
Kincardine, Ont.		21		167			
Kingsport, N.S.		15		35			
Kingston, Ont., graving dock		21		285		6, 15	
" harbour		21		231			
" public building		9, 29	18				
Kingsville, Ont.		21		167, 231			
Kluhane Lake, Y.T., recorders office			39				
Knights Point, P.E.I.		16		81			
Kootenay River, B.C.		23		185			
L							
Labille's Point, N.S.		15		35			
Lac a Beaulieu, P.Q.		18		125			
Lachine, P.Q., public building		8, 28	11				
Lachute, P.Q., public building		8					
Lacolle, P.Q., public building		18		125			
Lacombe, N.W.T., immigration building		31					
Lac Labelle, P.Q.		18					
Lake Francis, Man.		22		181			
Lake Manitoba, Man.				276			
Lake Megantic, P.Q.		19		128			
Lake Winnipeg				276			
Lake Winnipegosis, Man.				276			
Lakeport, Ont.		21		161			
Lake St. Francis, P.Q.		19					
Lake St. John, P.Q.		19					
Lameque, N.B.		17		95			
Lands leased, &c.							18
Lancaster, Ont.		21		178			
Langley, B.C.		23		186			
L'Anse à Giles, P.Q.		19		110			
L'Anse à Islet, P.Q.				111			
L'Anse à Fotsis, P.Q.		20		149			
Laprairie, P.Q., public building		8, 28					
" ice piers		19		127			
L'Ardoise, N.S.		15		35			
Larry's River, N.S.		15		36			
L'Assomption, P.Q.		19					
" public building		8, 28	11				
Last Mountain, N.W.T.		22		181			
Laurier bridge, Ottawa		24		294			
Lavaltrie, P.Q.		19					
Leamington, Ont.		21		168			
Leased properties							18
Les Cuissees d'Alma, P.Q.				128			
Leduc, N.W.T., immigration building		31					
Les Eboulements, P.Q.		19		228			
Les Ecoumains, P.Q.		19					
Le Tableau, P.Q.		19		129			
Lethbridge, N.W.T., public buildings		12, 31					
Letters, departmental, sent and received							47

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
L							
Lévis, P.Q., graving dock.....		19		285		6	
" public buildings.....		8, 28	11				
" dredging.....				228			
Lewes-Yukon rivers.....		23					
Lighting public buildings.....		27					
L'Islet d'Alma, P.Q.....		19					
Lindsay, Ont., public buildings.....		10, 29					
L'Islet, P.Q.....		19		129			
Litchfield, N.S.....		15		37			
Lismore, N.S.....		14		6			
Little Brook, N.S.....		15		37			
Little Current, Ont.....		21		232			
Little Forks, N.B.....		17					
Little Judique, N.S.....		15		38			
Little Narrows, N.S.....		15		38			
Little Pabos, P.Q.....		19					
Little River dam, N.B.....		17					
Little St. Francis River, N.B.....		17					
Little Tobique River, N.B.....		17					
Liverpool, N.S., harbour.....		15		38			
" public buildings.....		7, 27					
Livingston Cove, N.S.....		15		39			
Lloydminster, N.W.T., public buildings.....		12					
Lockeport, N.S.....		15					
Loggieville, N.B.....		16		95			
Long Point, N.S.....		15		39			
Longueuil, P.Q., public buildings.....		8, 28	12				
London, Ont., public buildings.....		10, 29	18				
Lord's Cove, N.B.....		17		96			
L'Original, Ont.....		21		168			
Lotbinière, P.Q.....		19		129			
Lower Lincoln, N.B.....		17					
Lower Plymouth, N.S.....		15		39			
Lower Ship Harbour, N.S.....		15		40			
Lower Woods harbour, N.S.....		15					
Lower St. Lawrence piers, P.Q.....		19					
Lunenburg, N.S., public building.....		7, 27					
M							
McDowell, Sam., gratuity.....		25					
McGrath, R. A., gratuity.....		25					
McKay's Point, N.S.....		15		45			
McNair's Cove, N.S.....		15					
McPherson's Cove, P.E.I.....		16		78			
Mabou, N.S.....		15		40, 191			
" bridge, N.S.....		15		40			
Macadam Junction, N.B., custom-house.....		7					
Macleod, N.W.T., public building.....		12, 31					
Madawaska River, slide.....		23		287			
Magdalen Island, P.Q.....		19					
" telegraph.....		25			7, 144		
Magog, P.Q., public building.....		8					
Maguasha, P.Q.....		19		130			
Mahone Bay, N.S.....		15		191			
Main-a-Dieu, N.S.....		15		41			
Malagash, N.S.....		15		41			
Malbaie, P.Q.....		19		132			
Malignant Cove, N.S.....		15		41			
Mallorytown, Ont.....		21					
Magitoba, dredging.....				276			
" harbours and rivers.....		22		181			
" public buildings.....		11, 31	30				
Marble Mountain, N.S.....		15		42			
Margaree Harbour, N.S.....		15		43			
" Island, N.S.....		15		43			
Margaretville, N.S.....		15		44			
Maritime Provinces, dredging.....				191			
" public buildings.....							
" telegraphs.....					7, 21		
Marshall's Cove, N.S.....		15		59			
Marsouin, P.Q.....		19					
Marysville, N.B., public building.....		27					
Masson, P.Q.....		19		130			
Matchedash Bay, Ont.....		21					
Meaford, Ont.....		21		168			
Medicine Hat, N.W.T., public building.....		12, 31					
Mekinac, P.Q.....				229			

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
M							
Meteghan Cove, N. S.		15		45			
Middle Country, Harbour, N. S.		15		47			
" River Dam, N. S.		15		47			
Midland, Ont.		21		232			
Midway, B. C., cattle quarantine.		12					
Mill Cove, N. S.		15		48			
Mill Vaches, P. Q.		19		131			
Mimicash, P. E. I.		16		78			
Minnetosa, Man., lands office.		11, 31					
Miramichi, N. B.		17		100			
Miscou, N. B.		17		96			
Mistook, P. Q.		19		131			
Mission City, B. C.		23		186			
Moncton, N. B., public building.		8, 27					
Monday Point, N. S.				29			
Montague, P. E. I., public building.		7, 27					
Mont Louis, P. Q.		19		131			
Montmagny, P. Q., public building.		8, 28	12				
" wharf.		19		132, 229			
Montmorency Falls, P. Q.		19		153			
Montreal, P. Q., public buildings.		8, 28	12				
" harbour.		19		132			
Moosejaw, N. W. T., public buildings.		12, 31					
Moosomin, public buildings.		12, 31					
Morrison's Point, N. S.		15		49			
Mount Lehman, B. C.		23					
Mud Cove, N. B.		17		97			
Murray Bay, P. Q.		19		132			
" Harbour, P. E. I.		16		82			
N							
Names of chief officers.							29
Nanaimo, B. C., public building.		12, 32	35				
Nanaimo-Cornox, telegraph.		25					
Nappan, N. S., experimental farm.		7					
Napanee, Ont., public building.		10, 29					
National Art Gallery, Ottawa.							25
Neebing River, Ont.		21					
Negro Point, N. B.		15		97			
Neil's Harbour, N. S.		12, 32	35	48			
Nelson, B. C., public buildings.		11					
Neepawa, Man., public building.				192			
New Brunswick, dredging.		16		84			
" harbours.		6					
" public buildings.		7, 27	5				
" telegraphs.		25					
New Campbellton, N. S.		15		49			
New Carlisle, P. Q.		19		132			
Newcastle, N. B., public building.		8, 27	6				
" harbour.		17		100			
" District, slides.	13	23		292		5	
" Ont.		21		169, 232			
Newfoundland, telegraph.					7		
New Glasgow, N. S., public building.		7, 27					
New Liskeard, Ont.		21		232			
New London, P. E. I.		16		79			
Newport Landing, N. S.		15		49			
Newport, P. Q.		19					
New Richmond, P. Q.		19					
New Westminster, B. C., public buildings.		12, 32	35				
Niagara Falls, Ont., public buildings.		10, 29					
Niagara-on-the-Lake, museum.		10					
Nicola-Penticton, B. C., telegraph.		25					
Nicole, P. Q., public building.		8	13				
" River, P. Q.				139			
" wharf.		19					
Noel, N. S.		15		50			
Nominigue, P. Q., immigration building.		8					
North Bay, Ont., public building.		10					
North East River, N. S.		15		50			
North Gut, St. Ann's, N. S.		15		49			
Northport, Ont.		21					
North Saskatchewan River, N. W. T.		22					
North Shore St. Lawrence, telegraphs.		25			8, 46		
North Sydney, N. S., harbour.		15		191			
" public building.		7, 27					
North Thompson River, B. C.		23		186			

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
N							
Northwest Territories, bridges.....		24		297			
" " rivers.....		22		181			
" " public buildings.....		11, 31	32				
" " telegraphs.....		25			24, 52		
Notre Dame du Portage, P. Q.....		19		133			
Notre Dame de Pierreville, P. Q.....		19					
Nova Scotia, dredging.....				191			
" " harbours.....		14		3			
" " public buildings.....			3				
" " telegraphs.....		25					
Nyanza, N. S.....		15		50			
O							
Oak Point, N. S.....		15		35			
" " N. B.....		17		194			
Oakville, Ont.....		21					
Officers of the department.....							29
" " employed on graving docks.....							37
" " on slides and booms.....							33
Official correspondence.....							47
Ogden's Pond, N. S.....		15		51			
Ogilvie, N. S.....		15		52			
Oka, P. Q.....		19					
Oliphant, Ont.....		21		169			
Ontario, bridges.....		24		295			
" " dredging.....				230			
" " harbours.....	6	21		155			
" " public buildings.....		9, 29	17				
" " telegraphs.....		25			9, 23		
Orangeville, Ont., public buildings.....		10, 29					
Orillia, Ont., public building.....		10, 29					
" " harbour.....		21					
Oshawa, Ont., public building.....		10, 29	19				
" " harbour.....		21		169			
Otonabee River, Ont.....		22		158, 232			
Ottawa, art gallery.....		10, 29					25
" " buildings and grounds.....		10	27				
" " government house.....		10	22				
" " experimental farm.....		10, 29					
" " Major's Hill park.....		10, 29					
" " new departmental building.....							
" " observatory.....			25				
" " post office.....		10, 29	20				
" " printing bureau.....		10, 29	24				
" " river.....		20-22		233			
" " survey.....		25					
" " royal mint.....		10	24				
" " slides and booms.....		23		286		3, 10	
" " roads and bridges.....		10, 24		294			
" " streets, repairs.....		29	25				
" " Victoria museum.....		10	25				
Owen Sound, Ont.....		21		233			
" " post office.....		10					
P							
Pacific cable tariff.....					9		
Panmure Island, P. E. I.....		16		79			
Paris, Ont., public building.....		10, 30					
Parker's Cove, N. S.....				52			
Park Hill, Ont., public building.....		10					
Parliament buildings, Ottawa.....		10	24				
Parrsboro', N. S.....		15		53			
Parry Sound, Ont.....		21		169			
Partridge Island, N. B., quarantine.....		8					
" " wharf.....		18		101, 193			
Paspebiac, P. Q.....		19					
Peace River road, N. W. T.....		24					
Peggy's Cove, N. S.....		15		53			
Peel Head, P. Q.....		19		133			
Pelee Island, Ont., telegraph.....		25			9, 51		
Pembroke, Ont.....		21					
" " public building.....		10, 30					
Penetanguishene, Ont.....		21					
Percé, P. Q.....		19					
Peribonca, P. Q., immigration building.....		9, 28					
Peterborough, Ont., public buildings.....		10, 30	27				
Petewawa, Ont., wharf.....		21					
" " River, slides.....		23		288			
Petites Bergeronnes, P. Q.....		19		133			

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
P							
Petite Rivière Peribonca, P.Q.		19		133			
Petite Rivière, N.S.		15		53			
Petit Rocher, N.B.		17		101			
Petrolia Ont., public building		10, 30					
Philipsburg, P.Q.		19		134			
Photographer, departmental		25					
Pickering, Ont., dredging		21		233			
Pictou, Ont., public building		10, 30					
Pictou, N.S., harbour		15		54, 191			
Pictou Island, N.S.		15		54			
Pictou Light Beach, N.S.		15		54			
Pictou, N.S., public buildings		7, 27	5				
Pierreville, P.Q.		19					
Piopolis, P.Q.		19		126			
Pitt River, N.W.T., bridge		24					
Pleasant Bay, N.S.		15		55			
Plymouth, N.S.		15		55			
Plympton, N.S.		15		55			
Pointe à Doré, P.Q.				229			
Pointe à Elie, P.Q.		19		134			
Pointe aux Esquimaux, P.Q.		18					
Pointe aux Trembles, P.Q.		19		135			
Pointe du Chêne, N.B.		17		102			
Pointe Claire, P.Q.		19					
Point Edward, Ont.		21		233			
Pointe à Valois, P.Q.		19		135			
Poirierville, N.S.		15		56			
Pointe aux Pères, P.Q.		18		122			
Pointe St. Pierre, P.Q.		19		135			
Portage du Fort, bridge		24		296			
Portage la Prairie, Man., public building		11, 31					
Porter's Lake, N.S.		15		56			
Port Arthur, Ont., harbour		21		169			
" " public buildings		10, 30					
Port Becketton, N.S.		14		10			
Port Bruce, Ont.		21		170			
Port Burwell, Ont.		21		234			
Port Colborne, Ont.		21		170			
" " public building		10, 30					
Port Daniel, P.Q.		19		136			
Port Dover, Ont.		21		171			
Port Elgin, Ont.		22					
Port Hammond, B.C.		23		187			
Port Hastings, N.S.				57			
Port Greville, N.S.		15		57			
Port Hawkesbury, N.S.		15		57			
Port Hood, N.S.		15		58			
Port Hope, Ont., harbour		22		172			
" " public building		10, 30					
Port Latour, N.S.		15		59			
Port Lorne, N.S.		15		59			
Port Morien, N.S.		14		17			
Portneuf, P.Q.		19		136			
Port Rowan, Ont.		22		172			
Port Stanley, Ont.		22		172			
Port St. Francis, P.Q.		19		137			
Prescott, Ont., public buildings		10, 30					
Prince Albert, N.W.T., public buildings		12, 31					
Prince Edward Island, dredging				194			
" " harbours		16		74			
" " public buildings		7, 27	9				
" " telegraphs		10, 29	24				
Printing Bureau		25					
Printing and stationery		25					
Properties purchased and sold							
Public buildings, British Columbia		12, 32	35				
" " Manitoba		11, 31	30				
" " New Brunswick		7, 27	5				
" " N.W.T.		11, 31	32				
" " Nova Scotia		7, 27	3				
" " Ontario		9, 29	17				
" " P.E.I.		7, 27	9				
" " Quebec		8, 28	9				
" " Yukon Territory		13, 32	38				
" " generally	11	13					
Public Works Agency, B.C.		25					
Pugwash, N.S.		15		60			
Puredell, T., gratuity		25					

Names of Places &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
Q							
Quasco, N.B.		17		102			
Qu'Appelle N.W.T., public buildings...		12, 31					
telegraphs...		25			24		
Quebec, dredging...				228			
bridges...		24		285			
harbours...	6	18		109			
public buildings...		8, 28	9				
telegraphs...		25			48		
City, public buildings...		8, 28	14				
wharf...	8	19		137, 229			
R							
Rainy River, Ont.		10					
Rama, Ont.		22		174			
Rays Creek, N.S.		15		60			
Red Deer, N.W.T., public buildings...		12, 31		80			
Red Point, P.E.I.		16					
Red River, Man.		22					
Regina, N.W.T., public buildings...		12, 31	33				
Rented buildings, Ottawa.	2						
Rents, received...						7	
paid...		27					
Repenigny, P.Q.		19		138			
Revenue...	4					7	
Richard's Landing, Ont.		22		174			
Richibucto, N.B., public building...		8, 27	6				
wharf...		17		103			
Richmond Bay, P.E.I.		16					
Richmond, P.Q., public building...		9, 28					
Rideau Hall, Ottawa...		10					
Rigaud, P.Q.		19					
Rimouski, P.Q., public building...		9, 28					
wharf...		19		138, 229			
Rivière-à-la-Pipe, P.Q.		19		140			
River Ashouapmouchouan, P.Q.		19		112			
Rivière Batiscan, P.Q.		20					
Rivière aux Renards, P.Q.		20		141			
Rivière Blanche, P.Q.		19		141			
Rivière Caplan, P.Q.		20					
Rivière Chateauguay, P.Q.		20					
Rivière du Lièvre, P.Q.		20		141			
Rivière du Loup (en bas), P.Q.		20		142			
(en haut), P.Q.		20					
Rivière Hébert, N.S.		15		60			
Rivière Jésus, P.Q.		20					
Rivière Godfroi, P.Q.		20					
Rivière Maskinongé, P.Q.		20					
River Otonabee, Ont.		22		158, 232			
River Ottawa, Ont.		20, 22		233			
Rivière Ouelle, P.Q.		20		143, 229			
Rivière Richelieu, P.Q.		20					
slides...		23					
Rivière Saguenay, P.Q.	13			293			
Rivière Saguenay, P.Q.		20					
Rivière St. François, P.Q.		20					
River St. John, N.B.		17		104			
River St. Lawrence...		22		235			
Rivière St. Louis, P.Q.		20		140			
Rivière St. Maurice, P.Q.		20					
slide...		23		291		4, 11	
River Thames, Ont.		21		174			
Rivière Miramichi, N.B.		17		100			
Rivière Verte, P.Q.		20		143			
Roads and bridges...		24		294			
Roberval, P.Q., immigration building...		9, 28					
wharf...		20		144			
Robinson's Island, P.E.I.				80			
Rondeau, Ont.		22		175			
Rosseau, Ont.				176			
Rossland, B.C., public buildings...		12, 32	36				
Ross Ferry, N.S.		15					
Rosthern, N.W.T., immigration building...		12, 32					
Round Hill, N.S.		15		61			
Rustico, P.E.I.		16		80			

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
S							
St. Alexis, P.Q.		20		147			
St. Alphonse de Bagotville, P.Q.		20					
St. André de Kamouraska, P.Q.		20		148			
St. Andrews, P.Q.		20					
St. Andrews Rapids, Man.	7	22					
St. Andrews, N.B., harbour.		17		193			
St. Andrews Rapids, Man.		31					
Ste. Adelalide de Pabos, P.Q.				144			
Ste. Anne des Monts, P.Q.		20		145			
Ste. Anne de la Pocatière, P.Q.		20		145			
Ste. Anne du Saguenay, P.Q.		20		145			
St. Boniface, Man., public building.		11					
Ste. Blaise, P.Q.		20		148, 229			
St. Charles Borromeo, P.Q.		20		148			
St. Charles de Caplan, P.Q.		19					
St. Catharines, Ont., public buildings.		10, 30	28				
St. Cunégonde, P.Q., post office.		28					
St. Edouard de Mechins, P.Q.				148			
Ste. Emélie, P.Q.		20					
St. Eustache, P.Q., post office.		28					
Ste. Famille, P.Q., immigration office.		20		149			
St. Fidele, P.Q.		20		149			
St. Francois de Sales, P.Q.		20					
St. Francois, P.Q.		20					
St. Fulgence, P.Q.		20		149			
St. Gédéon, P.Q.		20		150			
Ste. Genevieve, P.Q.		20		150			
St. Godfroi de Nouvelle, P.Q.		20					
St. Henri, P.Q., public buildings.		9, 28					
St. Hyacinthe, P.Q., public buildings.		9, 28	15				
St. Ignace, P.Q.		20		151			
St. Irénée, P.Q.		20		151			
St. Jean, Ile d'Orléans, P.Q.		20					
St. Jean des Chaillons, P.Q.		20		151			
St. Jean Baptiste river, P.Q.		19					
St. Jean Port Joli, P.Q.		20		152			
St. Jérôme, P.Q., public buildings.		9, 28	16				
" wharf.		20					
St. John River, N.B.		17					
" harbour, N.B.	7	18		193, 194			
" N.B., public buildings.		8, 27	6				
St. Johns, P.Q., dredging.				229			
" public buildings.		9, 28	15				
" booms.		23					
St. Joseph, Ont.		22		178			
St. Laurent, Ile d'Orléans, P.Q.		20		152			
St. Louis de Gonzague, P.Q.		20					
St. Louis du Mile End, P.Q.		9, 28					
St. Louis Headgate, P.Q.		20					
St. Marys, Ont., public buildings.		10					
St. Maurice River, dredging.							
" slides.	14	23		291		4, 11	
St. Peter's Bay, P.E.I.		16		81			
St. Placide, P.Q.		20					
St. Roch, P.Q., public building.							
St. Roch des Aulnaies, P.Q.		20		152			
St. Siméon, P.Q.		20		152			
St. Stephen, N.B., public building.		8, 27	8				
St. Thomas, Ont., public building.		10, 30	28				
St. Valier, P.Q.		20					
St. Zotique, P.Q.		20		152			
Sacré Cœur, P.Q.		20					
Saguenay River, slides.	13			293			
" telegraph.		25					
Sackville, N.B., post office.							
Salaries of enginemen, &c.		27					
Salmon River, B.C.		23		187			
Sandwich, Ont., public building.		10	28				
Sanford, N.S.		15		61			
Sand Point (St. John), N.B.		18		107			
Sarnia, Ont., dredging.		22		234			
" public building.		10-30					
Saskatoon, N.W.T., public building.		12, 32					
Saskatchewan River, N.W.T.		22					
Saugeen River, Ont.		22		176			
Sault Montmorency							

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
S							
Sault Ste. Marie, Ont., public building.....		10-30	28				
Savage Harbour, P. E. I.....		16		81			
Scott's Bay, N. S.....		15		82			
Seaside, N. S.....		15		63			
Secretary, staff, salaries.....		25					
Selkirk, Man., immigration building.....		11, 31					
" wharf.....		22		181			
Serpentine River, N. B.....		17					
Seven Islands, P. Q.....		20		118			
Severn River, Ont.....		22		177			
Shampers, N. B.....		17		193			
Shediac, N. B.....		17		102			
Sheet Harbour, N. S.....		15		70			
Shelburne, N. S., harbour.....		16		63, 192			
Shellmouth bridge, N. W. T.....		24		297			
Sherbrooke, P. Q., public buildings.....		9, 28					
Shippegan, N. B.....		18		108, 103			
Shrewsbury, Ont.....		22		177			
Silver-water, Ont.....		22		177			
Simcoe, Ont., post office.....		10					
Skeena River, B. C.....		23		187			
Skinner's Cove, N. S.....		16		63			
Slides and booms.....		23		286		3	
" dues.....							
" officials.....							33
Sluice Point, N. S.....		16		63			
Smith Falls, Ont., public building.....		10, 30					
Sorel, P. Q., harbour.....		20		153-230			
" public buildings.....		9, 28	16				
South River, P. E. I.....		16		82			
Souris, P. E. I.....		16		81			
" post office.....		7	9				
Southampton, Ont.....		22		178			
South Qu'Appelle, N. W. T., immig'n bldg.....		32					
Spallumachine, B. C.....		23		188			
Spoon Island, N. B.....		17		193			
Springhill, N. S., public building.....		7, 27					
Stettler, N. W. T., immigration building.....		12					
Stokes Bay, Ont.....		22					
Stonehaven, N. B.....		17		109			
Stratford, Ont., public buildings.....		10, 30	28				
Strathcona, N. W. T., immigration building.....		12, 32					
Strathroy, Ont., public building.....		10, 30					
Sturgeon river, Ont.....		22		234			
Summerside, P. E. I., harbour.....		16		82			
" public buildings.....		7, 27					
Summerville, N. S.....		16		64			
Superintendent of telegraphs.....		25			1		
Surveys and inspections.....		25					
Sussex, N. B., public buildings.....		8, 27					
Sydenham River, Ont.....		22		235			
Sydney, N. S., public building.....		7, 27					
" quarantine wharf.....		16		64			
Sydney Mines, N. S., public building.....		27	5				
T							
Tableau, P. Q.....		19		129			
Tariff, telegraph lines.....					35		
Tatamagouche, N. S.....		16		65			
Technical books of reference.....		25					
Telephones.....					11		
Telegraph lines, generally.....	13	25			9		
" report.....					1		
" revenue.....					10		
" service staff.....					4		
Temporary employees.....			25				
Tenby Bay, Ont.....		22		178			
Terrebonne, P. Q., public building.....		9, 28	16				
" wharf.....		20		154			
Teulon, Man., immigration building.....		31					
Thessalon, Ont.....		22		179			
Thetford Mines, P. Q., public building.....		9, 28					
Thors Island, Ont.....				179			
Thornbury, Ont.....		22		179			
Three Fathom Harbour, N. S.....		16		65			
Three Lakes, P. Q.....		19		126			

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
Three Rivers, P. Q., harbour.....		20		154			
public buildings.....		9, 28	16				
Tignish, P. E. I.....		16		83			
Tiverton, N. S.....		16		66			
Tobique River, N. B.....		17					
Toney River, N. S.....		16		66			
Toronto Junction, Ont., public building.....		11, 30					
Ont., harbour.....		22		179			
public buildings.....		10, 30	29				
Total expenditure of department.....		26					
Tracadie, N. B., lazaretto.....		8, 27	8				
N. S., harbour.....		16		66			
Transportation.....	5	25					
Treadwell, Ont.....		22		180			
Trent and Newcastle slides.....	13	23		292		5, 12	
Trenton, Ont., harbour.....		22					
public building.....		11, 30					
Trent River, Ont.....		22					
Trois Lacs, P. Q.....		19		126			
Trois Pistoles, P. Q.....		20		154			
Trout River, N. B.....		17					
Truro, N. S., public buildings.....		7, 27					
Tyrian, SS., cable ship.....	13	25			9		
U							
Uncollected slide and boom dues.....						8	
Upper Granville, N. S.....		15		60			
Upper Salmon River, N. B.....		18					
Upper Woods Harbour, N. S.....		16					
V							
Valois, P. Q.....		19		135			
Valleyfield, P. Q., public building.....		9, 28					
Vancouver, B. C., public buildings.....		12, 32	36				
Vancouver-Salt Springs, telegraph.....		25					
Verchères, P. Q.....		20					
Vernon-Kelowna, B. C., telegraph.....		25					
Victoria, B. C., harbour.....		23		277			
public buildings.....		12-32	37				
Victoria-Andrew, N. W. T., telegraph.....		25					
Victoria-Cape Beale, telegraph.....		25			55		
Victoria Bay, P. Q.....		19		127			
Victoria Beach, N. S.....		16		67			
Victoria, P. E. I.....		16		77			
Victoria National Museum.....		10	25				
Victoriaville, P. Q., public building.....		9, 29					
Ville Marie, P. Q.....		20		154, 230			
Virten, Man., armoury.....		11					
W							
Walkerton, Ont., public building.....		11, 30					
Wallace, N. S.....		16		67			
Washabuck, N. S.....		16					
Washago, Ont.....		22					
Water, public buildings.....		27					
Wendover, Ont.....		22					
West Arichat, N. S.....		16		68			
West Farnham, P. Q., public building.....		9, 29					
West Pubnico, N. S.....		16		69			
West Quoddy, N. S.....		16		70			
Western Head, N. S.....		16		69			
West River, N. S.....		15		70			
West Wood Harbour, N. S.....		16					
Weymouth, N. S.....		16		70			
Whinnock, B. C.....		23		183			
White's Cove, N. B.....		17					
White Haven, N. S.....		16		70			
White Head, N. S.....		16		71			
Whitehorse, Y. T., public building.....		32					
Whitemouth, N. W. T., bridge.....		24					
White Mud River, Man.....		22					
White Point, N. S.....		16		71			
Warton, Ont.....		22		235			
William Head, B. C., quarantine.....		12, 32	38				
Williams Head, B. C.....		23		183			
wharf.....		23		183			
Windsor, N. S., public building.....		7, 27					

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
W							
Windsor, Ont., public building.....		11, 30					
Wingham, Ont., post office.....		11					
Winnipeg, Man., public buildings.....		11, 31	30				
Winnipeg River, Man.....		22					
Winnipegosis, Man.....		22		276			
Woburn, P.Q.....		19		126			
Wolfe Island, Ont.....		21		235			
Wolfville, N.S.....		16		72			
Wolseley, N.W.T., court house.....		12, 32	34				
Wood Island, P.E.I.....		16		83			
Wood Mountain, N.W.T., telegraph.....		25					
Woodstock, Ont., public buildings.....		11, 30					
Woodstock, N.B., public buildings.....		8, 27	9				
Y							
Yakoun River, B.C.....		23	20	189			
Yamaska River, P.Q.....		20		230			
Yamaska, P.Q., lock and dam.....		20		155			
Yarmouth, N.S., dredging.....				192			
" " harbour.....		16		73			
" " public building.....		7, 27					
York Bridge, Ont.....		24					
Yorkton, N.W.T., public buildings.....		12, 32					
Yukon River.....		23	38				
" " public buildings.....		13, 32					
" " telegraphs.....		25			32-58		
Young, Wm., gratuity.....		25					

PART I

REPORT

OF THE

DEPUTY MINISTER OF PUBLIC WORKS

FOR THE YEAR ENDED JUNE 30

1906

REPORT
OF THE
DEPUTY MINISTER OF PUBLIC WORKS
FOR THE
FISCAL YEAR 1905-06

THE DEPARTMENT OF PUBLIC WORKS.

OTTAWA, January 7, 1907.

Hon. SYDNEY FISHER,
 Acting Minister of Public Works,
 Ottawa.

SIR,—I have the honour to submit the report of the operations of the Department of Public Works for the year ended on June 30, last.

EXPENDITURE.

The statement prepared by the Accountant shows the great expansion of our branch of the administration inasmuch as the expenditure made by this department during the fiscal year under review has reached the total of nearly \$10,000,000, while ten years ago the expenditure was barely \$2,000,000. The details of the expenditure may be succinctly given as follows :—

Harbour and river works.....	\$2,874,864 84
Dredging, &c..	1,922,315 08
Slides and booms..	151,995 35
Roads and bridges	103,359 53
Public buildings..	3,743,483 59
Telegraph lines.....	466,285 16
Miscellaneous..	585,423 87
Total..	<u>\$9,347,527 22</u>

6-7 EDWARD VII., A. 1907

The expenditure during the year 1903-4 amounted to \$6,492,289.62, and for 1904-5 to \$8,304,099.77. The progression during the last three years has been at the rate of more than \$1,000,000 a year, the increase being more marked in the construction of public buildings, as the sums applied to harbour and river works were about the same during the past year as during the preceding one. The dredging expenditure, however, has increased from the sum of \$375,000 in 1903-4 to \$1,460,000 in 1904-5, and nearly \$2,000,000 in the year 1905-6.

The revenue of the department during the year has been as follows:—

Slides and booms.	\$ 81,211 21
Graving docks.	44,067 63
Rents.	4,343 00.
Telegraph lines.	106,300 38
Casual revenue.	25,392 45
Total.	<hr/> \$261,314 67

The above statement shows a decrease of about \$19,000, as compared with the previous year, and about \$13,000 as compared with the year 1903-4. The difference is in the telegraph revenue, which has been smaller than in the two previous years above referred to. The income from graving docks shows an increase of nearly \$20,000, and that of the slides and booms is practically the same as last year, there being only a decrease of about \$1,600, and is greater than the revenue of the year 1903-4 by about \$9,000. Although the slides and booms show a decrease in the Ottawa district of more than \$6,000 compared with the previous year, the number of saw-logs was nearly 100,000 greater than in 1904-5. The reasons for this is the great falling off in the toll on the Petewawa river and the larger number of logs passing through other works on which the tolls are small as compared with those on that river. If all the logs made on the Petewawa river last year had come down and through the works, the rates collected on them would have amounted to more than the total shortage in the revenue of the Ottawa district. The collections in the St. Maurice district are the largest in the history of those works, amounting to over \$37,000, and being nearly \$700 more than that of the previous year.

As regards the revenue on telegraphs, the main decrease is in connection with the Yukon telegraph lines where the difference is more than \$38,000. This is due to the active competition of the cables and land lines built by the United States government, whereby all the business originating beyond the boundary in the Alaskan district, instead of being forwarded through our lines, as formerly, is now being sent through the United States land lines and cables. Another cause is the reduced volume of Canadian business originating from or being intended for Dawson, which is somewhat smaller than it was at the origin of the line.

In graving docks the increase is quite substantial, being nearly \$10,000 in the case of the Esquimalt graving dock, \$3,000 as concerns the Lévis dock, and more than \$6,000 for the graving dock at Kingston.

SESSIONAL PAPER No. 19

The buoyancy of the general revenue of the country has permitted the department to enlarge its field of operations; to renew many of the appliances for its work which had become old and in some cases almost obsolete, and to provide for the housing of the various administrative services as well as of the military forces of this country in larger and more commodious buildings. It has also permitted of the continuation of important works of harbour improvements already undertaken and to make a beginning of the construction of several others which were considered necessary for the increasing traffic and commerce of the country, but which could not be previously undertaken until an enlarged revenue admitted of their commencement.

Those several works will be referred to in a very succinct manner in the following pages, but their detail can be perused at leisure and with all the necessary information in the several appendices annexed to this report.

HARBOURS AND RIVERS.

As I have stated in the foregoing lines, the expenditure of the department under this heading, adding together the harbour and river works and the dredging, amounts to the total sum of \$4,296,979.92, about \$2,000,000 having been applied to dredging, both in the execution of the actual work and the construction of new plant or repairs to that already possessed by the department.

The question of transportation, especially during the past 8 or 10 years, has become one of the greatest importance to the people of this country, and has taken possession of the minds of those more intimately connected with its several growing interests in such a manner as to push it in the foreground to a degree which had never been known before. Many years ago, the necessity for works of great magnitude had already become apparent, but the schemes connected with the same were so expensive and the sums required to carry them to completion so large that the successive parliaments appeared to take in that question, only a transient interest, which for a long time was not followed by any actual work. For many years, the practice of expending small annual sums of money and procuring thereby correspondingly small results, was followed with probably good intent, but such a course unfortunately retarded, to a degree, the creation of avenues of trade which the country, with its increasing population and its consequently enlarged production, necessarily required.

When, however, the tide of immigration and of settlement of the country began to assume such proportions that the then existing railways, with their equipment, could with difficulty keep pace with the demands of transportation, the necessity for the improvement of the water routes gradually rose before the public mind as the construction of the Grand Trunk and Canadian Pacific railways had, some years before. Not only did the growth of population and the consequent extension of the grain producing acreage have that effect, but the great increase in the tonnage of vessels transporting products from one centre to the other rendered it also imperative that harbours hitherto sufficiently deep for existing commerce, now be provided with enlarged wharf accommodation and increased depth of water.

6-7 EDWARD VII., A. 1907

The harbours serving principally as outlets for the products of the west on the great lakes; those at the head of navigation on the St. Lawrence, and those forming the winter ports of the Dominion, all called for improvement and had to receive it unless the country decided to step to the rear rank in competing for its own carrying trade. Port Arthur, Fort William, Midland, Depot Harbour, Collingwood and Owen Sound, on the great lakes, demanded immediate attention. Montreal and Quebec, with the intervening harbours of Sorel and Three Rivers, also called for earnest and important consideration, while at St. John, N.B., and Halifax, in Nova Scotia important works required to be executed in preparation for the trade which was developing at those terminal points and of the immigration business which was becoming more and more important.

A plan for the improvement of Port Arthur and Fort William was devised, and after its adoption, tenders were called last year for the dredging necessary to give 22 feet of water and permit access to the wharfs built by the Canadian Northern Railway and the Canadian Pacific Railway Company. Arrangements were also made for the dredging of a basin at the Mission river in order to accommodate the lake terminus of the Transcontinental Railway. The dredging in question, which represents the expenditure of a large sum of money, has been extended over a period of three years, being rendered necessary, not only by the large sum required, but also in view of the difficulty in getting a larger number of dredges to work simultaneously and with proper results in a limited area. The work is being satisfactorily executed, and as it is proceeding, it greatly increases the depth available and each month sees a greater measure of relief available for the trade.

Dredging has been continued at Midland, Collingwood and other points, while earnest consideration is being given to the further improvement of Midland, which has become an important terminal harbour whence railway trains carry freight transported over the lakes from the west.

Outside of these larger works in the province of Ontario, many of its harbours of lesser importance have been attended to and contracts have either been continued or entered into for their improvement. The government wharf at Depot Harbour has been completed during the course of last year, and a large additional breakwater is being built in the harbour of Goderich. A wharf has also been commenced in Hamilton bay and a large breakwater pier at Meaford. The works at Parry Sound, Port Stanley and Rondeau have been well pushed forward, while a large number of less important works have also been carried through during that fiscal year.

In the province of British Columbia, the improvements usually carried on by the department in the rivers Columbia, Thompson and Fraser, and the works in the principal harbours, such as Vancouver and Victoria, have been continued and carried on with vigour. As was stated in previous reports, the dredging appliances in the province of British Columbia were very much strengthened by the addition of the hydraulic dredge *King Edward*, which has done very valuable work, especially in the Fraser river.

SESSIONAL PAPER No. 19

In the provinces of Alberta and Saskatchewan several works which devolved upon the federal administration before the territories were transformed into separate provinces, have been passed over to the provincial authorities, those works comprising amongst others several bridges built by the department and which are now controlled by the provincial authorities.

In the province of Manitoba the most important work devolving upon the department in the harbour and river section, is the improvement of the St. Andrews rapids. That improvement, which was begun some years ago, and which had to be abandoned on account of material changes in the accommodation to be given, was again put to competition this year, and a contract has been entered into, upon altered plans, with Messrs. Quinlan & Robertson. As a large portion of that work is to be constructed of concrete, the department has also called for tenders and awarded a contract for the delivery to the contractor of all the cement required for that work; this mode of action insuring uniformity in the quality of the cement, as well as in the examination and testing of the material.

In the same province improvements have also been made to the dredging fleet in order to render it more capable of coping with the increased demands for the improvement of navigation.

The practice of assisting inland and coasting commerce and fisheries in the provinces of New Brunswick, Nova Scotia and Prince Edward Island has been continued, by generous grants of public moneys, for the purposes of constructing breakwaters for the protection of fishermen, and landing places for the accommodation of local traffic. The use of creosoted timber has become very general in the construction of piers and breakwaters in the maritime provinces owing to the prevalence of the sea-worm which causes great damage to the works when unprepared native timber is being used. The question of the creation of creosoting works in Canada in order to permit the utilization of the native timber instead of foreign material, as is now the case when creosoted wood is being purchased, has several times been considered, but no action has yet been taken thereon. It seems a matter where private enterprise would probably be rewarded with success, as the quantity of creosoted timber now used in Canada is quite large and becoming every year larger.

Attention has been given by the department this year to the best interests of the maritime provinces by works of improvement, in the form of dredging, which has been performed in the harbour of St. John in order to enable the city to provide additional berths for ocean steamers which make St. John a terminal port during the winter. A contract has been entered into with Mr. G. S. Mayes for a certain quantity of dredging, and this contract, at the time of writing, is nearing completion. Assistance of the same nature has also been given in several other harbours as is shown in the report of the superintendent of dredging.

In order to provide for more dredging facilities in the many harbours of the maritime provinces, three additional dredging machines have been supplied. The *W. S. Fielding*, which was completed early last year, was successfully navigated down to Yarmouth and dredged there, during the balance of the season. The new dredge *Montague* was also sent down to Prince Edward Island to take the place of the old

6-7 EDWARD VII., A. 1907

Prince Edward, and the new hydraulic dredge, the *Northumberland*, has been completed at the Polsons' works at Toronto, where she has been tried and found satisfactory, and will be sent down at the opening of navigation next spring.

In the province of Quebec, the Tarte pier at Montreal is almost finished and the Three Rivers wharf is also nearing completion.

The undertaking carried on by Messrs. Dussault & Lemieux, in the harbour of Quebec has been pushed with vigour during the year under review, and it is hoped that by the end of this season the work now in hand will be well completed. The execution of these improvements will afford greater accommodation for large ocean steamers bringing immigrants and general freight to the harbour of Quebec; the work consisting of an extension of the old breakwater by a length of 1,460 feet, which will provide four berths for the largest steamers plying on the St. Lawrence.

In the years 1904-5 and 1905-6 the expenditure on the Quebec contracts has amounted to nearly \$600,000.

The work, although only partially constructed, has been utilized during the whole of last summer for the large steamers of the Canadian Pacific Railway Atlantic line, the 'Empress,' and a temporary but roomy shed, giving good accommodation, has been constructed for a moderate sum upon that part of the wharf now completed.

This appears, however, to be only the commencement of a larger work which will ultimately require to be built in the harbour of Quebec in order to provide the accommodation which will, of a certainty, be required in the near future for the St. Lawrence trade. The class of vessels coming up the St. Lawrence river is continually getting larger, their draught is rapidly increasing and there is no doubt that before many years have passed the new ships which will come into our national waterway will require greater accommodation which the works as at present planned, will be able to afford when they are completed.

NEW GRAVING DOCK.

In this connection the department has for some time had its attention drawn to the necessity of constructing a new graving dock for the St. Lawrence. It is a matter of very immediate moment, and one which if delayed may have a far reaching effect on the shipping trade of Canada. If the large vessels which are now used on the Atlantic ocean be not sure of finding at their terminal points in the St. Lawrence a place where they can speedily and properly be repaired, should any accident occur, the trade accommodated by those large carriers will gradually find its way elsewhere, as the time has passed away when small steamships are able successfully to compete with the larger ones and the latter having won the day will require repairing accommodation which cannot be denied them if they are to continue to be engaged in the Canadian trade.

The present dock, which was built in 1876, was, when designed, expected to be sufficient for the requirements of the country for many years to come. It is now 30

SESSIONAL PAPER No. 19

years old and its dimensions are of the past. Those who are conversant with the revolution that has taken place in the size and capacity of the present large carriers, claim that the structure has outlived the usefulness mapped out for it when constructed. It can still, with its length of 600 feet and its width at the entrance of 62 feet, accommodate vessels about 500 feet in length and under, but the depth over the entrance gate is such that deep draught vessels cannot enter it. It has been thought quite advisable to here refer to this matter, which has already received the serious attention of the Minister; and it is not believed that public reference to it is at all untimely.

This improvement of facilities in the harbour of Quebec, both for the accommodation and repair of vessels, is also intimately connected with the improvement of the channel to the eastward of the city down to a point below the Traverse, but this matter is one which is controlled by another department, that of Marine and Fisheries. Last season a powerful dredge, procured by that department, has been at work in the southern channel opposite Ile aux Grues, and it is understood that preparations are also made with a view of improving the north channel where the tangents in an improved water way would be longer and over a greater depth than could be given in the southern passage.

GEORGIAN BAY CANAL.

Coupled with the improvement of the great Canadian waterway from the upper lakes to the sea, referred to in the foregoing lines, must be mentioned the work done up to the present day in connection with the survey for the Georgian Bay Ship Canal, the plans of which will, it is hoped, be completed before many weeks have elapsed. When the report of the survey is issued it will be accompanied by data which will show to the country the great advantage which, if our means would admit of its construction, the building of such a great work would procure.

The assistant chief engineer, Mr. St. Laurent, who immediately supervises the work, has given the greatest attention and most of his valuable time to the proper conduct of the survey in question. Aided by the able engineers who assist him and are in charge of the several districts over which the line of the canal has been surveyed, not only has he gathered all the information procurable from the field work, but he has also carefully studied the matter from its economic aspect.

Information has been obtained concerning the various modes of transportation at present in use, comparisons are being made of the cost in each case, and as accurate information as possible is being procured in order that the question of the construction of that work, its advisability and future use can be well understood by the country.

INTERNATIONAL WATERWAYS COMMISSION

In alluding to the works performed by this department in the harbours and rivers of Canada, I must necessarily mention here the very important labour performed by the Canadian section of the International Waterways Commission. The initial reports of that commission which, as is well known, is composed jointly of

6-7 EDWARD VII., A. 1907

members appointed by the Canadian and United States governments, have been published as an addendum to the report issued by this department last year.

These reports refer to the preliminary steps taken by the commission, and contain a complete history of its proceedings to the date of publication. Its members have continued their work in the most able and interesting manner, their principal study during the course of the past year having been the important question of the apportionment of the water, coming over Niagara Falls, between the United States and Canadian users of power.

This matter is a very intricate one, and has been the subject of protracted investigation on the part of a commission, presided over by Hon. T. E. Burton, of the United States House of Representatives, which looked into the subject very carefully and took considerable evidence from several engineers of high standing and reputation on the present effect of utilizing the water for the industries now legally organized, as well as the possible result of taking, for the use of the Chicago drainage canal, additional water for the purposes of that great work.

Subsequent to their work in connection with the Niagara Falls, the commission has examined into the matter of the boundary line between the two countries on Lake Erie, and has also investigated the conditions existing at Sault Ste. Marie. The work of that commission is, I need not say, of the highest possible importance, and is being conducted by both the United States and Canadian commissioners with the earnest desire of rendering justice to both countries, and establishing, on the matters which it considers, regulations which, if acceptable to both sides, will remove the possibility of great and momentous questions arising in future which might create unpleasantness and be difficult of settlement.

All the reports, so far issued by this commission, will be compiled to date, and published in volume 2 of this annual report.

Monies were also provided during the last session of parliament for the expenses of two other commissions, one in connection with the Red River and the other in connection with the St. John river, but their labours have not yet been commenced, although both have been established by the appointment of the gentlemen who are to form the same.

The above statements, although short and necessarily without detail, will, it is hoped, be sufficient to show the impulse which, following in the footsteps of his energetic predecessors, the present Minister of Public Works has given to the idea of transportation already well understood by parliament and the country. The course which he has mapped out is easy to see and follow, and it must be said that he has, in the carrying out of the plans which he has laid down, determined on a broad line of policy which knows no special section nor province, but which is founded on the principle of general improvement of existing facilities, which in a country like ours must ever be present in the mind of those who have charge of catering to the improvement of its trade and commerce.

SESSIONAL PAPER No. 19

PUBLIC BUILDINGS.

The department has expended, during the past fiscal year, the sum of nearly \$4,000,000 in the construction and maintenance of public buildings, and it has also taken the initial steps for the construction of a new departmental building in the city of Ottawa in order to provide for the housing of those sections of the administrative services which are now accommodated in rented buildings.

During the course of the fiscal year under review, twelve buildings have been completed and delivered to the departments which are to occupy them in future. Those buildings are the post offices, &c., at Sydney Mines, Campbellton, Terrebonne, Bridgeburg, Hawkesbury, Oshawa and Sault Ste. Marie; the armouries at Woodstock, Burford, Kingston and St. Catharines, and the observatory at Ottawa. The buildings placed under contract number twenty. They cover the following list, viz.: the public buildings at Canso, Souris, Chicoutimi, Montmagny, Nicolet, St. Johns, Medicine Hat, Regina, and Vancouver; the immigration hospitals at Halifax, Lawlor's Island and Quebec; the military buildings at Fredericton, Guelph, London, Winnipeg; the postal stations at Montreal and Toronto; the immigration building at Edmonton and a building for the Indian Affairs, &c., at New Westminster, B.C.

Among the large buildings which are in course of construction and are not referred to in the foregoing list, may be mentioned the Royal Victoria Museum, the Royal Mint and the Archives buildings in Ottawa, and the Customs House at Halifax, the three latter being, at the time of writing, complete and ready for the installation of the fittings required for their occupation.

The steps taken towards the construction of a new departmental building at Ottawa cover only, to the present time, the acquisition of most of the property required as a site as well as the preparation for the call of tenders towards the construction of the building. At the time of the writing of this report, the greatest part of the properties extending from St. John's church to Cathcart street, on the western side of Sussex street, have been purchased or the price thereof agreed upon, it being the intention to construct two buildings, one from St. John's church to St. Patrick street on a plot of land measuring 1,175 feet in length and 275 feet in depth, the front of the building to face Major's Hill Park and to extend onto the park beyond the line of Mackenzie avenue. The other building, which may contain the Department of Justice, as well as the law courts (Supreme and Exchequer), will be a separate one extending on the plot of ground from St. Patrick street northward on the west side also of Sussex street, covering a length of 590 feet by a depth of 195 feet.

Those two buildings will give accommodation, as stated above, for the services now located in rented buildings in the city, and the term during which those rented buildings are to be occupied has been so arranged as to coincide as much as possible with the date at which the new departmental building in question shall be completed.

How far from actual facts was the opinion expressed by one of Canada's prominent statesmen in 1865, when, in one of his letters, speaking of the parliament and

6-7 EDWARD VII., A. 1907

departmental buildings then being constructed, while expressing his admiration for the plan and style of those constructions and the accommodation they were designed to give, he found that in size they were '100 years in advance of the age.' Not twenty years afterwards, in 1882, it was found necessary to construct the building which is now generally known as the Langevin Block, and this latter pile was no sooner completed than already accommodation was sought outside of the buildings, and such accommodation had to be procured by renting premises in the city.

There is something to be said for and against that practice. It permits of immediate enlargement and accommodation of new services, but it distributes, throughout the city, branches of departments which should be kept together. A department having several of its services scattered in that manner cannot as well be controlled as it should be; the public having business with its several branches do not generally know where to find the one which they need to visit; the supervision is less immediate and the general results are not as satisfactory.

As regards the expenditure, it is a debatable question as to whether the amount expended in rentals for the accommodation received is not probably less than what will be represented by new departmental buildings after they are finally constructed, furnished and equipped. Suffice it to say, however, that the expectations of the department are that upon the completion of the Archives building, the Royal Victoria Museum and the new departmental building, as projected, accommodation will be found for a somewhat lengthened period, and the necessity of renting buildings will disappear.

In the newly organized provinces of Alberta and Saskatchewan several of the public buildings constructed by the federal government have been transferred to the local legislatures for future management, the original cost of the buildings in question being made a charge upon the provinces in which they are situated. Those buildings are mainly the local assembly buildings, the court houses, jails and registry offices. They have been well constructed, and are probably of a better class than could have been built by the provinces themselves. The transfer was arranged to the mutual satisfaction of both federal and local governments, an officer appointed by each of them taking part in the classification and valuation of those buildings.

The statement of the Accountant also shows in addition to the expenditure on construction, the amounts which represent the cost of maintaining all the buildings already constructed. This, although a more humble part of the work of the Chief Architect, is, however, a very important one and the details connected with it are so numerous and the existence of the buildings is so involved in their proper maintenance that it requires the greatest possible care and assiduous supervision which, I must say, cannot be better exercised than in the present instance.

The work of the Chief Architect had been, during the past years, more or less handicapped by the lack of proper room for the accommodation of his staff of assistant architects and draughtsmen, but fortunately with the completion of the extension to the block, room has been procured not only for the standard service of the

SESSIONAL PAPER No. 19

Department of Inland Revenue, and the records of the Department of Railways and Canals but a fine and commodious draughting office has been given to the Chief Architect where the officers acting under him will have all the light and space which they require in order to carry on their very important work.

TELEGRAPHS.

There has been no important addition to the length of the telegraph lines under the control of this department during the past fiscal year as the expenditure thereon has only amounted to \$57,000 while the total expenditure on telegraphs has reached the figure of \$466,285.16. The bulk of the sum so expended has been for the maintenance of the land lines of telegraph in the Yukon district, in middle and southern British Columbia, in the provinces of Alberta and Saskatchewan, on the north shore of the St. Lawrence from Quebec eastward and on the island of Cape Breton.

Those lines are now in fair working order and procure the service for which they were constructed, and an effort is being made by proper inspection to have them kept up to the requisite standard within as economical limits as possible.

The work of repairing the cables has been performed with diligence and care, and with very satisfactory results, by the ship *Tyrian*, whose officers and crew have performed their labour in a manner which calls for the highest encomium. The commander of the ship, Capt. O'Leary, as well as the first officer Dixon and chief engineer Zwicker, have under all weathers, and sometimes under very adverse conditions, performed their work in a manner which I cannot praise too much, having had occasion to personally see it performed and be a judge of the sterling qualities of the men in charge.

OTHER REPORTS.

This report further contains several appendices giving the state of the revenue of the Department during the past fiscal year; the operations of the slides and booms on the Trent, the Ottawa, St. Maurice and Saguenay rivers, the list of contracts entered into by the Department, of the property purchased and sold and other less important appendices which will give a sufficient idea of the large amount of work performed by and for the Department.

With reference to the report on slides and booms, it may be here stated that, towards the end of the fiscal year, the whole of the Trent and Newcastle works were transferred to the control of the Department of Railways and Canals, with the exception of the slides at Fenelon Falls and Burleigh, which still remain under the control of this department as regards the passage of timber through those slides. The whole of the Trent river for the purposes of navigation is now controlled by the Department of Railways and Canals.

On the Saguenay river the increase which has taken place in the lumbering industry, following especially the establishment of large pulp mills at the town of Chicoutimi, has induced the department to construct works to facilitate the passage of

6-7 EDWARD VII., A. 1907

timber. An agreement has been made with the Chicoutimi Pulp Company, which was the prime mover in the agitation for the construction of those works, to the effect that should the revenue during the next five years fall short of the maintenance account, the difference will be paid to the government by the company. It is expected, however, that the works in question will ultimately return a good profit on the primary expenditure.

On the St. Maurice works the construction of a dam at Grandes Piles, for the storage of water and for retaining the timber for proper distribution, has not yet been begun, although negotiations have taken place with the lumbermen with the view of establishing tolls in connection with that dam which will yield sufficient return to pay for maintenance of the work and a reasonable interest on the capital invested.

In concluding this report I must here place on record my deep appreciation of the great assistance I have received from all the employees of this department in carrying on the work entrusted to us, and I may say that their assistance has been given to me at all times most ungrudgingly and in a most pleasing manner.

I have the honour to be, sir,

Your obedient servant,

A. GOBEIL.

Deputy Minister.

PART II

REPORT OF THE CHIEF ACCOUNTANT

FOR THE

FISCAL YEAR ENDED JUNE 30

1906

2. 116.

3. 117.

4. 118.

5. 119.

6. 120.

7. 121.

DEPARTMENT OF PUBLIC WORKS, CANADA,

ACCOUNTANT'S OFFICE,

OTTAWA, December 8, 1906.

A. GOREIL, Esq.,

Deputy Minister,

Department of Public Works,

Ottawa.

SIR,—I beg to submit the annual report upon the expenditures made by this department during the fiscal year ended June 30, 1906.

As in previous years the report takes the form of three tabular statements, as follows :—

Statement A, giving for each work the amounts expended for construction and repairs severally, and for each province the total cost of staff and maintenance of public buildings.

Statement B, subsidiary to the above and giving separately for each building the cost of rent, salaries, heating, &c.

Statement C, showing amounts advanced by government for the construction of certain works of a semi-public character, under statutory authority and after inspection by officers of this department.

The total expenditure during the year 1905-6 has exceeded that of the previous year by more than 12 per cent, as follows :—

Total expenditure 1905-6.....	\$9,347,527 22
" 1904-5.....	8,304,009 77
Increase.....	<u>\$1,043,517 45</u>

The volume of work passed through the branch during 1905-6 may be briefly indicated, as follows :—

	Number of cheques issued.	Amount.
		\$ cts.
Direct payment by departmental cheque—		
Issued by head office, Ottawa.....	50,234	4,023,879 82
" agencies.....	9,648	678,909 56
Total departmental cheques.....	59,882	4,702,789 38
Payment by Receiver General's cheque after applications issued by this office upon the Auditor General (contract work, &c.).....	997	4,644,737 84
Total expenditure.....		<u>9,347,527 22</u>

I have the honour to be, sir, your obedient servant,

A. G. KINGSTON,

Chief Accountant.

STATEMENTS OF EXPENDITURE

DURING

FISCAL YEAR ENDED JUNE 30, 1906

STATEMENT A.—Showing the Amounts Expended by the Department of Public Works of Canada during the Fiscal Year ending June 30, 1906.

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
PUBLIC BUILDINGS.				
<i>Nova Scotia.</i>				
Amherst post office, &c.		133 77		133 77
Annapolis post office, &c.		60 58		60 58
Antigonish post office, &c.	11,255 12	25 25		11,280 37
Arichat post office, &c.		1 05		1 05
Baddeck post office, &c.		390 19		390 19
Canso post office, &c.	10,470 66			10,470 66
Dartmouth port office, &c.		210 26		210 26
Digby post office, &c.		61 40		61 40
Glace Bay post office, &c.	102 98			102 98
Guysboro' post office, &c.		460 09		460 09
Halifax armouries.		20 00		20 00
" cattle quarantine station.	3,810 13			3,810 13
" custom house (new).	54,955 37			54,955 37
" Dominion building.		4,857 63		4,857 63
" immigrant shed.	11,112 67	194 51		11,307 18
" detention building.	23,992 64			23,992 64
" Lawlor's Island quarantine station (winter hospital).	8,841 00			8,841 00
Inverness post office, &c.	1,289 79			1,289 79
Kentville post office, &c.		489 50		489 50
Liverpool post office, &c.		9 20		9 20
Lunenburg post office, &c.	2,462 38	117 67		2,580 05
Nappan experimental farm.		187 67		187 67
New Glasgow post office, &c.		83 03		83 03
North Sydney post office, &c.	3,507 49	81 80		3,589 29
Pictou custom house.		287 32		287 32
" post office.		765 56		765 56
Springhill post office, &c.		1,859 83		1,859 83
Sydney post office, &c.	2,594 22	88 04		2,682 26
Sydney Mines post office, &c.	10,516 10			10,516 10
Truro post office, &c.		166 55		166 55
" armoury.	5,059 69			5,059 69
Windsor post office, &c.		199 05		199 05
Yarmouth post office, &c.	4,404 55	28 62		4,433 17
Heating, lighting, water, &c., for all buildings in Nova Scotia (for details see page 27).			34,113 18	34,113 18
Totals, Nova Scotia.	154,374 79	10,738 57	34,113 18	199,226 54
<i>Prince Edward Island.</i>				
Charlottetown Dominion building.	5,406 05	2,428 71		7,834 76
" marine hospital.		6 30		6 30
" quarantine station.		733 25		733 25
Montague post office.	600 00	203 15		803 15
Souris post office.	9,448 10			9,448 10
Summerside post office.		226 83		226 83
Heating, lighting, water, &c., for all buildings in Prince Edward Island (for details see page 27).			6,518 75	6,518 75
Totals, Prince Edward Island.	15,454 15	3,598 24	6,518 75	25,571 14
<i>New Brunswick.</i>				
Bathurst post office, &c.		1,189 45		1,189 45
Campbellton post office, &c.	16,016 04			16,016 04
Carleton (St. John), post office.		99 11		99 11
Chatham post office, &c.	2,865 74	49 91		2,915 65
Dalhousie post office, &c.		542 84		542 84
Fredericton post office, &c.		162 41		162 41
" drill hall.	11,132 02			11,132 02
MacAdam Junction, custom house.		337 15		337 15

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
PUBLIC BUILDINGS—Continued.				
<i>New Brunswick—Concluded.</i>				
Moncton, post office.....	3,415 54	43 90		3,459 44
Newcastle, post office.....		328 64		328 64
Partridge Island, quarantine station.....	38,085 33			38,085 33
Richibucto, post office.....		781 44		781 44
Sackville, post office.....		52 04		52 04
St. John, cattle quarantine station.....	1,840 00			1,840 00
" custom house.....		1,812 22		1,812 22
" immigration building.....		805 96		805 96
" post office.....		883 65		883 65
" savings bank.....		268 53		268 53
" generally.....			112 81	112 81
St. Stephen's, post office, &c.....		1,027 68		1,027 68
Sussex, post office, &c.....		47 89		47 89
Tracadie, lazaretto.....	1,282 61			1,282 61
Woodstock, armoury.....	23,884 25			23,884 25
" post office, &c.....		490 89		490 89
Heating, lighting, water, &c., for all buildings in New Brunswick, (for details see page 27).....			30,489 86	30,489 86
Totals, New Brunswick.....	98,471 53	8,923 71	30,602 67	137,997 91
<i>Quebec.</i>				
Acton Vale, post office.....	8,808 76			8,808 76
Aylmer, post office.....		199 90		199 90
Berthierville, post office.....		564 86		564 86
Boucherville, post office.....		50 00		50 00
Buckingham, post office, &c.....		326 65		326 65
Cedar Hall, post office.....		0 50		0 50
Chicoutimi, post office, &c.....	12,042 65			12,042 65
Coaticook, post office, &c.....		865 32		865 32
Drummondville, post office, &c.....	1,180 68	501 15		1,501 15
Granby, post office, &c.....	16,895 45			16,895 45
Grosse Isle, quarantine station.....		501 12		501 12
Fraserville, post office, &c.....		15 66		15 66
Hochelaga, post office.....		53 00		53 00
Hull, post office, &c.....	469 26			469 26
Iberville, post office.....	1,558 04	74 32		1,632 36
Joliette, post office, &c.....		157 17		157 17
Lachine, post office.....	74 75			74 75
Lachute, post office, &c.....		463 18		463 18
Laprairie, post office, &c.....		544 52		544 52
L'Assomption, post office, &c.....		117 40		117 40
Lévis, cattle quarantine.....		13 00		13 00
" post office, &c.....	22,063 57			22,076 57
Longueuil, post office, &c.....	10,580 90			10,580 90
Magog, post office.....	18 63			18 63
Montmagny, post office, &c.....	2,704 89	39 70		2,744 59
Montreal, custom house.....		2,399 54		2,399 54
" examining warehouse.....	20,099 18	294 17		20,393 35
" immigration office.....	4,234 42			4,234 42
" inland revenue office.....		194 22		194 22
" post office.....	2,074 74	3,288 33		5,363 07
" rented offices.....		135 70		135 70
" power for elevators.....			2,964 36	2,964 36
" pneumatic tube system between G. P. O. and new postal stations.....	23,487 79			23,487 79
" new postal station, St. Catherine street.....	3,913 37			3,913 37
Nicolet, post office.....	365 14			365 14
Nominigues, immigration building.....	335 05			335 05
Quebec, citadel buildings.....		6,499 82		6,499 82
" drill shed for school of gunnery.....	64 70			64 70
" clerk of works office (P. O.).....		28 08		28 08
" culler's office.....		25 09		25 09
" custom house.....		2,124 17		2,124 17
" examining warehouse.....		192 45		192 45
" King's wharf building (Marine Dept.).....		1,067 14		1,067 14
" immigration building (Louise embankment).....	12,708 21			12,708 21
" hospital for trachoma.....	20,507 26			20,507 26
" observatory.....		419 39		419 39
" post office.....		4,937 11		4,937 11
" power for elevator.....			200 00	200 00

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
PUBLIC BUILDINGS—Continued.				
<i>Quebec—Concluded.</i>				
Quebec military buildings:				
Dominion arsenal.....	3,412 35			3,412 35
" artillery workshops, shed for storage.....	1,000 00			1,000 00
" St. Roch, post office.....		60 49		60 49
Peribonka, immigrant shed.....		51 71		51 71
Richmond, post office, &c.....		368 95		368 95
Rimouski, post office, &c.....		26 40		26 40
Roberval, immigration shed.....		59 35		59 35
Sherbrooke, drill hall.....	180 62			180 62
" post office, &c.....		865 07		865 07
Sorel, post office, &c.....		2,222 68		2,222 68
St. Henri, post office.....		506 50		506 50
St. Hyacinthe, drill hall.....	29,975 72			29,975 72
" post office, &c.....	2,710 88	355 50		3,066 38
St. Jerome, post office, &c.....	2,499 08	124 10		2,623 18
St. John's, post office, &c.....	424 90	13 05		437 95
St. Louis du Mile End, post office.....	9,811 96	11 70		9,823 66
Terrebonne, post office, &c.....	12,006 08			12,006 08
Thetford Mines, post office, &c.....	3,613 99			3,613 99
Three Rivers, custom house.....	6,522 93	364 95		6,887 88
" drill hall.....	31,596 08			31,596 08
" post office.....		815 32		815 32
Valleyfield, post office, &c.....	8,601 37	3 35		8,604 72
Victoriaville, post office, &c.....		146 99		146 99
West Farnham, post office.....		317 01		317 01
Heating, lighting, water, &c., for all buildings in Que- bec. (For detail see page 29.).....			107,503 82	107,503 82
	276,543 40	32,405 78	110,668 18	419,617 36
<i>Ontario.</i>				
Alexandria, post office, &c.....		2,533 59		2,533 59
Almonte, post office, &c.....		964 47		964 47
Amherstburg, post office, &c.....		37 15		37 15
Arnprior, post office, &c.....		512 18		512 18
Barrie, post office, &c.....		4,810 26		4,810 26
Belleville, drill hall.....	9,391 01			9,391 01
" post office, &c.....		1,618 72		1,618 72
Berlin, post office, &c.....		2,250 40		2,250 40
Bowmanville, post office, &c.....	6,622 59			6,622 59
Brampton, post office, &c.....		60 78		60 78
Brantford, drill hall.....	17,331 99			17,331 99
" post office, &c.....	2,540 53	51 73		2,592 26
Bridgeburg, post office, &c.....	16,000 99			16,000 99
Brockville, post office, &c.....	6,046 60	334 54		6,381 14
" drill hall.....		9 00		9 00
Burford, drill hall.....	1,368 42			1,368 42
Carleton Place, post office, &c.....		288 88		288 88
Cayuga, post office.....		94 18		94 18
Chatham, armoury.....	36,127 78			36,127 78
" post office, &c.....		5,138 73		5,138 73
Clinton, post office, &c.....		660 39		660 39
Cobourg, armoury.....	13,775 71			13,775 71
" post office, &c.....	2,524 64	86 69		2,611 33
Cornwall, post office, &c.....		525 14		525 14
Deseronto, post office, &c.....		15 57		15 57
Dundas, drill hall.....		6 40		6 40
" post office.....		4 50		4 50
Fort William, post office, &c.....		355 67		355 67
Galt, post office, &c.....	7,476 34	4 15		7,480 49
Gananoque, post office.....		55 55		55 55
Goderich, post office, &c.....		13 50		13 50
Guelph, armoury.....	5,373 13			5,373 13
" post office, &c.....	8,004 77	23 78		8,028 55
Hamilton, drill shed.....	559 44			559 44
" examining warehouse.....		389 90		389 90
" post office, &c.....	1,264 21	244 42		1,508 63
" power for stamping machine.....			27 00	27 00
Hawkesbury, post office, &c.....	13,073 30			13,073 30
Ingersoll, post office, &c.....		9 38		9 38
Kenora, post office, &c.....		117 45		117 45
Kingston, custom house.....		439 33		439 33
" field battery stable.....	4,985 50			4,985 50

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
PUBLIC BUILDINGS—Continued.				
<i>Ontario—Continued.</i>				
Kingston, military college.....	6,250 02			6,250 02
" post office.....		2,603 86		2,603 86
Lindsay, post office, &c.....		172 63		172 63
London, custom house.....		1,053 93		1,053 93
" drill hall and armoury.....	3,473 35			3,473 35
" military stores.....	10,034 55			10,034 55
" post office.....	20,010 81	782 68		20,793 49
Napanee, post office, &c.....		300 66		300 66
Niagara Falls, post office, &c.....		227 38		227 38
Niagara-on-the-Lake, historical museum.....	1,000 00			1,000 00
North Bay, post office, &c.....	5,148 45			5,148 45
Orangeville, post office, &c.....		95 21		95 21
Orillia, post office, &c.....		3,295 49		3,295 49
Oshawa, post office, &c.....	20,066 33			20,066 33
Ottawa, astronomical observatory.....	29,487 17	12 50		29,499 67
" bacteriological laboratory.....	1,085 00	12 61		1,097 61
" departmental buildings (western).....	57,218 64			57,218 64
" Dominion archives building.....	45,015 47			45,015 47
" experimental farm.....		8,909 85		8,909 85
" government printing bureau.....	69,859 76			69,859 76
" lovers' walk, retaining wall, &c.....	2,170 12			2,170 12
" major's hill park, maintenance.....			8,000 00	8,000 00
" national art gallery.....	3,932 22		540 00	4,472 22
" new departmental buildings, (site).....	7,314 00			7,314 00
" new government coal shed.....	76 50			76 50
" parliament building, improvements.....	26,930 01			26,930 01
" parliament grounds, installing electric light.....	17,573 19			17,573 19
" paving Wellington street.....	33,852 07			33,852 07
" post office.....	80,000 43			80,000 43
" Rideau Hall.....	26,713 35	38,123 17		64,836 52
" Rideau Hall, grounds, \$6,876.27; snow, \$970.40; fuel and light, \$8,500.00; watch- man, \$547.50.....			16,894 17	16,894 17
" royal mint.....	137,034 22			137,034 22
" Victoria memorial museum.....	101,228 61			101,228 61
" generally: parliament grounds.....			11,647 11	11,647 11
" power for elevators, &c.....			4,022 67	4,022 67
" removal of snow.....			1,595 75	1,595 75
" repairs and furniture.....		250,744 07		250,744 07
" telephone service.....			9,734 93	9,734 93
Owen Sound, post office, &c.....	10,075 59			10,075 59
Paris, post office, &c.....		12 20		12 20
Park Hill, drill shed.....	812 65			812 65
Pembroke, post office, &c.....		2,130 25		2,130 25
Peterboro', custom house.....		131 73		131 73
" post office.....		4,122 94		4,122 94
Petrolia, post office, &c.....		1,068 49		1,068 49
Pictou, post office, &c.....		63 56		63 56
Port Arthur, post office, &c.....		428 53		428 53
Port Colborne, post office, &c.....		131 66		131 66
Port Hope, post office, &c.....		45 38		45 38
Prescott, post office.....		264 65		264 65
Rainy River, post office.....		358 75		358 75
Sandwich, post office, &c.....	13,797 00			13,797 00
Sarnia, post office, &c.....		102 54		102 54
Sault Ste. Marie, post office, &c.....	21,333 21	39 58		21,372 79
Simcoe, post office, &c.....	59 51			59 51
Smith's Falls, post office, &c.....		13 75		13 75
Stratford, drill shed.....	35,124 63			35,124 63
" post office, &c.....		121 42		121 42
Strathroy, post office, &c.....		1,074 80		1,074 80
St. Catharines, drill hall.....	26,673 47			26,673 47
" post office, &c.....		98 45		98 45
St. Mary's, post office, &c.....	2,783 72			2,783 72
St. Thomas, post office, &c.....	4,949 22	50 25		4,999 47
Toronto, asst. rec. gen. office.....		152 55		152 55
" barracks.....	34 26			34 26
" custom house.....	24,551 59	675 34		25,226 93
" power for elevator.....			109 52	109 52
" drill hall.....	39,994 45			39,994 45
" examining warehouse.....	1,840 91	812 36		2,653 27
" power for machinery.....			9 63	9 63
" post office.....	18,529 27	1,610 84		20,140 11

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
PUBLIC BUILDINGS—Continued.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Ontario—Concluded.</i>				
Toronto, post office pneumatic tube system.....	57,513 94			57,513 94
" " power for stamp machine.....			140 37	140 37
" postal station "A".....		300 73		300 73
" " "A" power for stamp machine.....			205 91	205 91
" " "B".....		285 33		285 33
" " "C".....	1,462 42	736 76		2,199 18
" " "F".....	49,010 37			49,010 37
" " "H".....		322 23		322 23
Toronto Junction, post office.....		26 45		26 45
Trenton, post office, &c.....		35 70		35 70
Walkerton, post office, &c.....		148 03		148 03
Windsor, armoury.....		220 00		220 00
" post office, &c.....	4,864 16	50 00		4,914 16
" cattle quarantine station.....	587 80			587 80
Wingham, post office, &c.....	7,978 01			7,978 01
Woodstock, post office, &c.....		321 60		321 60
" armoury.....	33,743 98			33,743 98
Heating, lighting, water, &c., for all buildings in On- tario, (for details see page 30).....			306,765 55	306,765 55
Totals, Ontario.....	1,213,661 38	343,947 32	359,692 61	1,917,301 31
<i>Manitoba.</i>				
Brandon, Dominion lands office.....		1,063 35		1,063 35
" experimental farm.....		423 09		423 09
" immigrant shed.....		414 13		414 13
" post office, &c.....		2,522 07		2,522 07
Dauphin, immigrant shed.....		110 00		110 00
Emerson, cattle quarantine station.....	546 53			546 53
Minnedosa, Dominion lands office.....		10 00		10 00
Neepawa, post office.....	2,095 75			2,095 75
Selkirk, post office.....	2,028 09			2,028 09
St. Boniface post office.....	4,628 90			4,628 90
Portage la Prairie, post office.....		925 51		925 51
Virten, drill shed.....	7,125 55			7,125 55
Winnipeg, custom house.....		968 78		968 78
" Dominion lands office.....		175 33		175 33
" examining warehouse.....	88,520 40	165 74		88,686 14
" immigrant shed.....	85,531 95	208 67		85,740 62
" military buildings, stores.....	22,388 31			22,388 31
" magazine.....	1,490 00			1,490 00
" quarters for non-commissioned officers.....	47 22			47 22
" paving Osborne St.....	3,951 02			3,951 02
" post office.....		6,613 65		6,613 65
" post office, power for stamp machine.....			126 58	126 58
" post office new building.....	273,757 90			273,757 90
" post office, north C.P.R. track.....	15,794 83			15,794 83
Heating, lighting, water, &c., for all buildings in Mani- toba (for details see page 31).....			29,896 82	29,896 82
Totals, Manitoba.....	507,906 45	13,600 32	30,023 40	551,530 17
<i>North-west Territories.</i>				
Athabaska Landing, post office.....		290 33		290 33
Banff, museum.....		23 11		23 11
Battleford, Dominion lands office.....		411 50		411 50
" immigration shed.....		100 00		100 00
Cattle quarantine corrals at various points.....	4,201 84			4,201 84
Calgary, court house, &c.....		526 59		526 59
" immigrant building.....		142 49		142 49
" land titles office.....		293 82		293 82
" post office, &c.....	40,013 09	695 73		40,708 82
Cardstone, custom house.....		112 95		112 95
Carduff, court house.....		77 84		77 84
Davidson, immigration shed.....		105 00		105 00
Edmonton court house.....		74 28		74 28
" Dominion lands and registry office.....		220 39		220 39

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
PUBLIC BUILDINGS—Continued.				
<i>North-west Territories—Concluded.</i>				
Edmonton immigrant shed.....	4,622 69	70 75		4,693 44
" jail.....	12,971 87			12,971 87
" post office.....	20,066 45			20,066 45
Indian Head, experimental farm.....		394 22		394 22
Lethbridge, court house and custom house.....		10 30		10 30
" immigrant shed.....		135 27		135 27
" post office.....		31 56		31 56
Lloydminster, immigrant shed.....		909 00		909 00
Macleod, court house.....		1,382 70		1,382 70
Medicine Hat, court house.....		237 50		237 50
" post office.....	9,343 56			9,343 56
Moose Jaw, court house.....		611 65		611 65
" immigrant shed.....		10 00		10 00
" post office.....	20,050 01			20,050 01
Moosemin, court house.....		1,110 87		1,110 87
Prince Albert, court house and post office.....	39,981 73			39,981 73
" Dominion land registry office.....		3 00		3 00
Qu'Appelle, immigrant shed.....		4 95		4 95
Red Deer, court house and Dominion lands office.....	2,841 72	47 69		2,889 41
Regina, court house.....		335 32		335 32
" Dominion lands and registry office.....		419 08		419 08
" immigrant building.....		352 49		352 49
" Lieut.-Governor's residence.....		82 38		82 38
" post office.....	19,528 07	898 11		20,426 18
Rosethorn, immigrant shed.....		58 10		58 10
Saskatoon, post office.....	9,100 72			9,100 72
" immigrant shed.....		125 00		125 00
Stettler, immigrant shed.....		33 00		33 00
Strathcona, immigrant shed.....		20 00		20 00
Wolsley, court house.....		329 30		329 30
Yorkton, court house and jail.....		146 77		146 77
Heating, lighting, water, &c., for all buildings in North-west Territories (for details see page 32).....			26,433 08	26,433 08
Totals, North-west Territories.....	182,721 75	10,833 04	26,433 08	219,987 87
<i>British Columbia.</i>				
Agassiz, experimental farm.....		128 32		128 32
Atlin, post office, &c.....		24 00		24 00
Fernie, post office.....	5,165 00	403 95		5,568 95
Gateway, cattle quarantine station.....	1,578 88			1,578 88
Kamloops, post office, &c.....		204 10		204 10
Midway, cattle quarantine station.....	862 40			862 40
Nanaimo, post office, &c.....		1,554 12		1,554 12
Nelson, cattle quarantine station.....	929 73			929 73
" drill shed.....		42 00		42 00
" post office, &c.....	1,901 00	77 76		1,978 76
New Westminster, post office.....	6,916 67	952 30		7,868 97
Roseland, post office, &c.....		122 66		122 66
" armoury.....	4,448 96			4,448 96
Vancouver, custom house.....		393 41		393 41
" examining warehouse.....		326 09		326 09
" immigrant shed.....		1,296 33		1,296 33
" post office.....	781 50	4,970 36		5,751 86
" post office (new building).....	99,929 85			99,929 85
Victoria, cattle quarantine station.....	674 80			674 80
" old custom house.....		209 90		209 90
" examining warehouse.....		714 50		714 50
" immigrant shed.....		122 67		122 67
" marine hospital.....		4 50		4 50
" post office.....		896 26		896 26
" post office (power for stamp machine).....			213 12	213 12
" old post office.....		65 95		65 95
William's Head, quarantine station.....	1,099 94		385 00	1,484 94
Heating, lighting, water, &c., for all buildings in British Columbia (for details, see page 32).....			26,864 34	26,864 34
Totals, British Columbia.....	124,288 73	12,509 18	27,462 46	164,260 37

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
PUBLIC BUILDINGS—Concluded.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Yukon Territory.</i>				
Heating, lighting, water, &c., for all buildings in Yukon Territory (for details, see page 82).....			78,293 86	78,293 86
Totals, Yukon Territory.....			78,293 86	78,293 86
<i>Public Buildings Generally.</i>				
Salaries of clerks of works and assistants.....			14,000 85	14,000 85
Advertising tenders for coal, Dominion buildings.....			1,428 38	1,428 38
Printing, stationery, instruments, travelling, &c.....			14,267 83	14,267 83
Totals, public buildings generally.....			29,697 06	29,697 06

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and maintenance.	Total.
HARBOURS AND RIVERS.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Nova Scotia.</i>					
Amaguadees.....		499 79			499 79
Amherst Point.....		1,806 88			1,806 88
Anderson's Cove.....		1,813 29			1,813 29
Annapolis.....			3,885 75		3,885 75
Apple River.....		78 63			78 63
Arisaig.....			1,253 52		1,253 52
Baddeck.....		3,000 00			3,000 00
Bailey's Brook.....	2,042 36				2,042 36
Barachois.....		1,034 36			1,034 36
Barrington Passage.....		8,734 15			8,734 15
Bass River.....			493 38		493 38
Battery Point.....		2,000 00			2,000 00
Baxter Harbour.....		2,258 69			2,258 69
Bayfield.....		1,600 00			1,600 00
Bay St. Lawrence.....		47 97			47 97
Bear Cove.....		2,231 07			2,231 07
Beckerton.....		2,639 90			2,639 90
Bear River.....			584 86		584 86
Benoit's Cove.....			54 22		54 22
Big Sluice, Cape Island.....		1,500 00			1,500 00
Black Point.....		108 30			108 30
Black Rock Landing.....			49 75		49 75
Blomidon—Mill Creek Wharf.....		2,155 08			2,155 08
Boisdale.....		199 21			199 21
Bourgeois Inlet.....		1,048 79			1,048 79
Bridgewater.....	1,568 52				1,568 52
Broad Cove Marsh.....			3,699 99		3,699 99
Canning.....		14,137 08			14,137 08
Cape Negro Island Harbour.....			1,162 80		1,162 80
Centre Burlington.....			99 96		99 96
Charlo Cove.....		52 53			52 53
Chebogue.....			48 25		48 25
Chegoggin.....			299 79		299 79
Cheticamp Harbour.....		2,003 60			2,003 60
Cheverie Harbour.....			1,000 00		1,000 00
Church Point.....		1,200 00			1,200 00
Clark's Harbour.....		4,000 00			4,000 00
Country Harbour.....	2,200 04				2,200 04
Cow Bay (Port Morien).....		16,956 84			16,956 84
Cow Bay Run.....		500 00			500 00
Cribbins Point.....			872 49		872 49
Cross Island.....			299 73		299 73
Culloden.....		128 78			128 78
Cunningham's Point.....		1,946 36			1,946 36
D'Escousse.....			149 40		149 40
Devil's Island.....		6,427 88			6,427 88
Delap's Cove Breakwater.....		1,127 12			1,127 12
Digby Pier.....			462 61		462 61
Drumhead Breakwater.....		134 71			134 71
East Berlin.....		1,477 75			1,477 75
East Chezzetcook.....		4,000 00			4,000 00
Economy.....		400 00			400 00
Eskasoni.....		183 78			183 78
Feltzen South.....		2,454 06			2,454 06
Finlay Point.....			74 99		74 99
Fort Laurence.....			272 00		272 00
Freeport.....		13,923 92			13,923 92
Fruids Point.....		5,000 00			5,000 00
Gabarus.....		22,341 79			22,341 79
Georgeville wharf.....		3,601 99			3,601 99
Glance Bay.....		18,089 02			18,089 02
Goose Bay.....		2,599 68			2,599 68
Grand Etang Bay.....			478 65		478 65
Grand Narrows.....		64 44			64 44
Gull Island.....			24 75		24 75
Half Island Cove.....		182 95			182 95
Halifax Graving dock.....		2,500 00		10,000 00	10,000 00
Hall's Harbour.....		103 64			103 64
Harrigan's Cove.....			86 72		86 72
Hawkesbury.....		1,000 04			1,000 04
Hiltz Narrows.....		997 86			997 86
Hunt's Point.....		765 38			765 38
Indian Harbour.....			100 31		100 31
Iona wharf.....					100 31

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
<i>Nova Scotia—Con.</i>					
Iona wharf, east of I. C. R. bridges.....		899 90			899 90
Irish Cove.....		799 97			799 97
Janvrin Island.....		599 37			599 37
Jeddore.....	1,185 11				1,185 11
Jersey Cove (or Eel Cove).....		52 63			52 63
Joggins' Mines.....		2,999 81			2,999 81
Kelly's Cove.....		1,008 81			1,008 81
Kingsport.....			459 50		459 50
Labille Point.....		498 20			498 20
L'Ardoise.....		6,712 50	491 49		7,203 99
Larry's River.....		1,590 25			1,590 25
Litchfield.....		999 30			999 30
Little Brook.....			4,998 53		4,998 53
Little Judique.....		998 67			998 67
Little Narrows.....			720 00		720 00
Liverpool.....		2,998 02			2,998 02
Livingstone Cove.....			999 51		999 51
Lockeport.....	3,063 09				3,063 09
Long Point.....		2,000 00			2,000 00
Lower Plymouth.....		1,544 46			1,544 46
Lower Ship Harbour.....		1,947 34			1,947 34
Lower Woods Harbour.....			9 57		9 57
Mabou Bridge wharf.....		1,318 59			1,318 59
Mabou Harbour.....	16,663 82		299 94		16,963 76
Mackay's Point.....			100 00		100 00
Mahone Bay.....	9,130 64				9,130 64
Main à Dieu.....		9,242 50			9,242 50
Malagash wharf.....		176 56			176 56
Malignant Cove.....		988 42			988 42
Marble Mountain.....		895 00			895 00
Margaree Harbour.....		1,495 15			1,495 15
Margaree Island.....			499 68		499 68
Margaretville.....		1,579 85			1,579 85
Meteghan Cove.....		3,971 00	365 53		4,336 53
Middle Country Harbour.....		29 02			29 02
Middle River dam.....			499 73		499 73
Mill Cove.....		997 00			997 00
McNair's Cove.....			248 54		248 54
Neil's Harbour.....		1,189 44			1,189 44
New Campbellton.....		1,904 14			1,904 14
Newport Landing.....		3,348 72			3,348 72
Noel wharf.....			1,031 68		1,031 68
North East Harbour.....		3,000 00			3,000 00
North Gut, St. Anns.....			328 02		328 02
North Sydney.....	216 86				216 86
Nyanza wharf.....		398 06			398 06
Ogden's Pond.....		799 76			799 76
Ogilvie.....		78 95			78 95
Parker's Cove.....		116 44			116 44
Parrsboro.....		2,513 75			2,513 75
Peggy's Cove.....		597 61			597 61
Petite Riviere.....		3,999 83			3,999 83
Pictou Island.....			172 30		172 30
Pictou Harbour.....	6,768 42				6,768 42
Pictou Light Beach.....		996 00			996 00
Pleasant Bay.....		89 97			89 97
Plympton.....			2,500 00		2,500 00
Plymouth wharf.....			125 00		125 00
Poirierville.....		102 88			102 88
Porter's Lake.....		1,194 57	36 21		1,230 78
Port Greville.....		5,411 60			5,411 60
Port Hawkesbury.....		2,225 53			2,225 53
Port Hood Harbour.....		9,999 91	600 06		10,599 97
Port LaTour.....		5,307 84			5,307 84
Port Lorne.....		757 99			757 99
Pugwash.....		128 70	1,978 23		2,106 93
Ray's Creek.....		1,500 65			1,500 65
Riviere Hebert.....		1,968 89			1,968 89
Ross Ferry, Boularderie Centre.....			274 21		274 21
Round Hill.....		2,000 14			2,000 14
Sanford.....		1,258 97			1,258 97
Scott's Bay.....		2,089 96			2,089 96
Seaside.....			639 74		639 74
Sheet Harbour.....		2,205 61			2,205 61

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
<i>Nova Scotia—Con.</i>					
Shelburne Harbour.....	1,352 29	1,311 80			2,664 09
Skinner's Cove.....		7,763 95			7,763 95
Sluice Point.....		1,198 75			1,198 75
Summerville wharf.....		2,486 38	132 40		2,618 78
Sydney quarantine station.....		1,098 97			1,098 97
Tatamagouche.....		1,616 43			1,616 43
Tracadie breakwater.....		1,199 57			1,199 57
Three Fathom Harbour.....		1,117 29			1,117 29
Tiverton.....			48 98		48 98
Toney River.....		4,727 55			4,727 55
Upper Wood's Harbour.....			118 88		118 88
Victoria Beach.....		30,503 82			30,503 82
Wallace Harbour.....		10,093 05			10,093 05
Washabuck.....			147 27		147 27
West Arichat.....		1,526 22	542 98		2,069 20
West Pubnico.....		1,198 83			1,198 83
West Quoddy.....		366 75			366 75
Western Head.....			49 10		49 10
West Wood's Harbour.....			41 52		41 52
Weymouth Harbour.....		658 01			658 01
White Haven.....			100 00		100 00
White Head.....		3,344 94			3,344 94
White Point.....			579 08		579 08
Wolfville.....		4,310 13			4,310 13
Yarmouth Harbour.....	16,031 57		673 60		16,705 17
Generally.....	155 44			1,576 35	1,731 79
Totals, Nova Scotia.....	54,950 65	342,535 49	35,265 20	11,576 35	444,327 69
<i>Prince Edward Island.</i>					
Blooming Point.....			271 75		271 75
Campbell's Cove.....			1,005 64		1,005 64
Charlottetown.....	\$15,287 96				
Less Refund for dredging at private wharf.....	336 00				
	14,951 96				14,951 96
China Point.....			380 88		380 88
Cove Head.....		650 36			650 36
Grand River.....			65 00		65 00
Graham's Pond.....			599 68		599 68
Hickey's Pier.....			104 50		104 50
Haggerty's Pier.....			177 30		177 30
Hurd's Point.....			51 64		51 64
Kier's Shore Pier.....			250 00		250 00
Miminigash.....		3,173 63			3,173 63
McPherson's Cove.....		7,064 00			7,064 00
Murray River.....	551 88				551 88
New London.....			1,558 62		1,558 62
Panmure Island.....		695 48			695 48
Red Point.....			300 05		300 05
Richmond Bay.....		2,115 00			2,115 00
Rustico Harbour, Robinson Island.....		3,976 25			3,976 25
breakwater, north side			238 13		238 13
St. Peter's Bay.....		897 26			897 26
Savage Harbour.....		755 50			755 50
Souris, Knights Point.....		4,130 15			4,130 15
South River, Murray Harbour.....			1,496 94		1,496 94
Summerside Harbour.....		802 13			802 13
Tignish.....		2,998 75			2,998 75
Victoria Pier (Crapaud).....			263 87		263 87
Wood Islands.....	1,850 12	753 67			2,603 79
Generally, P.E. Island.....	77 71			1,612 44	1,690 15
Totals, P.E. Island.....	17,431 67	28,012 18	6,764 00	1,612 44	53,820 29
<i>New Brunswick.</i>					
Anderson's Hollow.....		442 86			442 86
Black Brook (Loggieville).....			999 50		999 50
Black River wharf.....			589 25		589 25

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and maintenance.	Total.
HARBOURS AND RIVERS—Con.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>New Brunswick—Con.</i>					
Buctouche.....		5,960 00	1,505 73		7,465 73
Burnt Church.....		42,888 47	473 01		473 01
Campbellton.....					42,888 47
\$2,254 11					
Less refund by private parties.....	1,683 75				
	570 36				570 36
Campbellton ferry wharf.....			113 35		113 35
Cape Tormentine.....		13,252 09			13,252 09
Caraquet wharf.....		16,971 24			16,971 24
Chance Harbour.....		1,326 72			1,326 72
Chatham.....	275 50	538 66			814 16
Chockfish.....		1,200 00			1,200 00
Clifton, Stonehaven.....		9,000 46			9,000 46
Dalhousie.....		33,928 00			33,928 00
\$8,959 84					
Less refund by private parties.....	2,700 00				
	6,259 84				6,259 84
Dipper Harbour.....		17,758 04			17,758 04
Durham.....		13,548 50			13,548 50
Edgetts Landing.....		1,835 55			1,835 55
Great Salmon River.....		2,175 00			2,175 00
Hopewell Cape.....			59 98		59 98
Lameque wharf.....		1,100 00			1,100 00
Lord's Cove.....			412 54		412 54
Miscou Harbour.....		8,007 50			8,007 50
Mud Cove.....		1,250 58			1,250 58
Newcastle.....	3,000 00				3,000 00
Oak Point wharf.....		47 84			47 84
Petit Rocher.....		11,587 40			11,587 40
Pointe du Cane.....		14,999 75			14,999 75
Quaco Harbour.....		1,130 00			1,130 00
Richibucto.....		5,483 85			5,483 85
Riviere Miramichi, N.W. branch, near Mullin's wharf.....	4,996 21				4,996 21
River St. John and tributaries—					
Big Falls.....	\$100 00				
Bosse Island.....	400 00				
Dumfries.....	47 49				
Grand Falls.....	1,169 25				
Green River.....	650 00				
Iroquois River.....	199 77				
Little Forks (River Iroquois).....	100 00				
Little River St. Francis.....	200 00				
Little River Dam.....	400 13				
Little Tobique.....	300 00				
Lower Lincoln.....	274 74				
Serpentine River.....	300 00				
Sissin Branch Falls.....	300 00				
Tobique River.....	549 99				
Trout River.....	100 00				
Generally.....	1,252 54				
		6,343 91			6,343 91
River St. John wharfs, in tidal water, (contribution to local government, half cost)—					
Gagetown.....	898 95				
Devil's Rock.....	508 55				
White's Cove.....	864 68				
High water.....	369 58				
		2,641 76			2,641 76
River St. John, dredging—					
Cedars wharf.....	\$1,287 35				
Glenwood wharf.....	2,417 77				
Jenkins Cove.....	1,720 64				
Shampers.....	703 07				
Spoon Island.....	789 85				
	6,918 68				6,918 68
St. Andrews.....	5,685 41				5,685 41

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—Con.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>New Brunswick—Con.</i>					
St. John Harbour, Fort Dufferin.....			493 12		493 12
" " Negro Point.....		19,995 11			19,995 11
" " Partridge Island.....		49 98			49 98
St. John Harbour, dredging—					
Sand Point slip..... \$ 100,019 82					
I. C. R. wharf..... 747 78					
Winter Berths..... 8,047 68					
Partridge Island..... 5,240 45					
	114,055 73				114,055 73
Shippegan.....	11,376 64	3,090 73			14,467 37
Caracquet Ry. wharf.....		3,890 97			3,890 97
Upper Salmon River.....			300 00		300 00
Generally, N.B.....	155 44			1,576 36	1,731 80
Totals, New Brunswick.....	153,293 81	240,444 97	4,946 48	1,576 36	400,261 62
<i>Quebec.</i>					
Anse à Beauvils.....		1,317 35			1,317 35
Anse à l'Îlot.....		1,000 00	549 32		1,549 32
Anse aux Gascons.....		2,696 71			2,696 71
Anse aux Griffons.....		3,159 53			3,159 53
Anse du Cap.....		468 69			468 69
Anse St. Jean.....		1,005 75			1,005 75
Baie des Rochers.....			499 68		499 68
Baie St. Paul.....			175 21		175 21
Baie St. Paul, repairs to wharf at Cap aux Corbeaux.....			282 74		282 74
Barachois de Malbaie.....		4,508 19			4,508 19
Beauharnois.....	580 00				580 00
Belœil, guide piers.....		1,173 19			1,173 19
Berthier (en bas).....	938 37		39 36		977 73
Berthierville.....	8,221 84				8,221 84
Bic, pier at Pointe à Côté.....		4,490 23			4,490 23
Bromptonville.....			501 17		501 17
Cannes de Roches.....		1,368 28			1,368 28
Canton Fabre, Lake Temiskaming.....		2,045 69			2,045 69
Chambord.....		1,782 39			1,782 39
Champlain.....		3,752 05			3,752 05
Chateau Richer.....		4,514 86			4,514 86
Como.....	17,979 50				17,979 50
Chicoutimi wharf.....				40 00	40 00
Corner-of-the-Beach (Gaspé).....			438 43		438 43
Coteau Landing.....			183 35		183 35
Cross Point.....		3,020 15			3,020 15
Deschambault.....		10,022 31			10,022 31
Desjardins, Allumette Island.....		781 70			781 70
D'Israeli Landing.....		1,514 19			1,514 19
Doucet's Landing.....	19,516 26				19,516 26
Douglstown.....		6,855 96			6,855 96
East Templeton.....		28 10			28 10
English River.....		2,983 90			2,983 90
Escoumains.....		5,941 72			5,941 72
Esquimaux Point.....			70 16		70 16
Father Point, landing pier.....		30,166 52			30,166 52
Gatineau Point.....		8,135 61			8,135 61
Graham.....	4,214 28				4,214 28
Grandes Bergeronnes.....			3 48		3 48
Grande Rivière (Gaspé).....		1,078 18			1,078 18
Grands Mechains.....		727 58			727 58
Grand Pabos.....		1,668 29			1,668 29
Gronelines.....		9,531 84			9,531 84
Grosse Isle, hospital wharf.....		281 87			281 87
Hudson wharf.....	7,998 92		205 65		8,204 57
Hull wharf.....			35 00	233 50	268 50
Isle aux Noix (Barbotte River).....	1,677 83				1,677 83
Isle Perrot.....			1,051 27		1,051 27
Lacolle wharf.....	518 00		1,000 32		1,518 32
Lac Labelle piers.....			50 00		50 00
Lac à Beaulieu.....			10 75		10 75

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
<i>Quebec—Con.</i>					
Lake Megantic, piers—					
Woburn pier.....	942 27				
Three Lakes.....	502 80				
Popolis.....	1,673 43				
Victoria Bay.....	1,241 14				
		4,359 64			4,359 64
Lake St. John wharf, generally.....			2,439 67		2,439 67
Lake St. Francis wharf.....		285 84			285 84
L'Anse à Giles.....		947 08			947 08
L'Assomption.....	7,978 04				7,978 04
Laprairie, ice piers, &c.....		21,079 84			21,079 84
Lavaltrie.....		1,800 00			1,800 00
Les Eboulements.....	1,371 69		20 25		1,391 94
Les Ecoureuls.....		1,000 29			1,000 29
Levis, graving dock.....	2,232 00		2,700 00	15,634 71	20,566 71
Le Tableau, Descente des Femmes, wharf on River Saguenay.....		593 32			593 32
L'Isle d'Alma, removal of rocks.....		1,015 96			1,015 96
L'Islet wharf.....			485 11		485 11
Little Pabos.....		2,629 45			2,629 45
Lothiniere.....		3,998 48			3,998 48
Lower St. Lawrence, removal of rocks—					
Anse à la Louise.....			100 00		100 00
Cap des Rosiers.....			201 50		201 50
Les Escoumains.....			317 22		317 22
Petites Bergeronnes.....			476 70		476 70
St. Charles de Caplan.....			200 00		200 00
St. Jean Baptiste River.....			498 13		498 13
Magdalen Islands, breakwaters—					
Bassin.....		5,484 91			5,484 91
Grindstone.....		1,752 99			1,752 99
Grande Entrée.....		120 84			120 84
Pointe à Elie.....		11,912 63			11,912 63
Generally.....				40 50	40 50
Maguasha.....		2,727 50			2,727 50
Mason.....		5,374 71			5,374 71
Montmagny.....			28 38		28 38
Marsouin wharf.....		142 01			142 01
Mille Vaches.....		4,969 19			4,969 19
Mistook (Delisle) wharf.....		4,013 35			4,013 35
Mont Louis.....		6,177 65			6,177 65
Montmagny wharf.....	374 80		450 03		824 83
Montmorency Falls.....		7,158 00			7,158 00
Montreal Harbour.....		67,855 80			67,855 80
Murray Bay.....			819 54		819 54
New Carlisle.....		9,990 60			9,990 60
Newport breakwater.....		9,830 44			9,830 44
New Richmond.....		27 10			27 10
Nicolet, jetty.....			7,999 65		7,999 65
Nicolet River, dredging.....	1,483 75				1,483 75
Notre Dame de Pierreville.....	8,081 86				8,081 86
Notre Dame du Portage.....		4,999 27			4,999 27
Oka.....	12,119 10				12,119 10
Paspébiac, landing pier.....		220 60			220 60
Peel Head, Missisquoi Bay.....		2,066 22			2,066 22
Paré wharf (North cove).....		1,678 94			1,678 94
Paré, South beacon.....			124 35		124 35
Petites Bergeronnes.....		1,209 10			1,209 10
Petite Riviere, Peribonka.....		610 04			610 04
Pointe Claire.....				150 00	150 00
Philipsburg.....			339 83		339 83
Pointe aux Trembles (Portneuf Co.).....		7,421 50			7,421 50
Pointe à Valois.....			600 00		600 00
Pointe St. Pierre, breakwater.....		7,180 00			7,180 00
Port Daniel.....		9,652 15			9,652 15
Portneuf.....		3,991 24			3,991 24
Port St. Francis.....		4,996 16			4,996 16
Quebec Harbour improvements.....	11,034 78	210,425 17			221,459 95
Rigaud.....	14,395 55				14,395 55
Repentigny wharf.....		5,530 50			5,530 50
Rimouski wharf.....	10,751 45	20,329 58		243 33	31,354 26
Rivers Ashouapmouchouan & Peribonka.....		4,311 26			4,311 26
Riviere à la Pipe, wharf.....	116 64	3,815 70	213 65		4,145 99
Riviere Blanche.....			999 83		999 83

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
Quebec—Con.					
Riviere Batiscan.....	10,730 25				10,730 25
Riviere aux Renards.....		14,630 50			14,630 50
Riviere Caplan.....		999 81			999 81
Riviere Chateauguay.....	6,838 78				6,838 78
Riviere Chateauguay enlargement at discharge into River St. John.....	1,570 13				1,570 13
River Ottawa (Blanche shoals).....	24,176 12				24,176 12
Riviere du Lievre, lock.....		39,587 51		8,914 55	48,502 06
Riviere du Loup (Fraser ville).....		5,841 64			5,841 64
Riviere du Loup (en haut).....	15,771 34				15,771 34
Riviere Godefroi.....	4,019 37				4,019 37
Riviere Jesus.....	9,610 54				9,610 54
Riviere Maskinongé.....	3,749 04				3,749 04
Riviere Ouelle.....			4,411 61		4,411 61
Riviere Richelieu.....			3,132 85		3,132 85
Riviere Saguenay.....	49,273 83				49,273 83
Riviere St. Francois.....	3,677 10				3,677 10
Riviere St. Louis.....		7,100 00			7,100 00
Riviere St. Maurice, channel between Grandes Piles and La Tuque.....	11,240 71				11,240 71
Riviere St. Maurice, Eastern channel.....	33,274 42				33,274 42
Riviere Verte, wharf.....		5,800 49			5,800 49
Roberval.....	3,890 99		585 28		4,476 27
St. Alexis, Baie des Ha Ha.....		6,317 35			6,317 35
St. Alphonse de Bagotville.....		12,523 34	337 04		12,860 38
St. André de Kamouraska.....		1,026 93		6,499 14	1,026 93
St. Andrews (Co. Argenteuil).....	7,133 95				7,133 95
St. Anne des Monts.....		2,615 11			2,615 11
St. Anne de la Pocatière.....		1,199 15			1,199 15
St. Anne du Saguenay, wharf.....		2,460 84	201 53	20 00	2,682 37
St. Blaise.....	666 07	1,495 75			2,161 82
St. Charles Borromée.....		4,016 42			4,016 42
St. Emélie.....			180 22		180 22
St. Famille, I. O.....		353 30			353 30
St. Fidele, wharf.....		11,006 80			11,006 80
St. Francois de Sales.....		7,001 23			7,001 23
St. Francois, I. O.....		312 27			312 27
St. Fulgence.....		5,016 98			5,016 98
St. Gédéon Islands, wharf.....		1,174 23			1,174 23
St. Genevieve, piers.....			927 00		927 00
St. Godfroi de Nouvelle.....		500 00	250 00		750 00
St. Ignace de Loyola.....		1,299 86			1,299 86
St. Irenée, wharf.....			338 35		338 35
St. Jean, I. O.....		113 40			113 40
St. Jean des Chailions, wharf.....		14,995 04			14,995 04
St. Jean, Port Joli.....		1,245 63			1,245 63
St. Jérôme (Lake St. John, wharf).....		454 71		133 12	587 83
St. Laurent, I. O.....					80 62
St. Louis de Gonzague.....	80 62				80 62
St. Louis head gates.....				117 30	117 30
St. Placide.....	11,867 10				11,867 10
St. Siméon.....		15,412 39			15,412 39
St. Valier.....		227 97			227 97
St. Roch des Aulnaies.....		2,323 78			2,323 78
St. Zotique.....			58 50		58 50
Seven Island wharf.....				37 50	37 50
Sorel, deep water wharf.....	395 50	11,216 85			11,614 15
Sorel, ice piers.....			15 00		15 00
Terrebonne.....		6,995 54			6,995 54
Three Rivers harbour.....		89,893 13			89,893 13
Trois Pistoles breakwater.....		1,378 76	420 15		1,798 91
Vercheres.....			64 32		64 32
Ville Marie (Lake Temiscamingue).....	580 00	2,479 92			3,059 92
Yamaska, lock and dam.....			10 80	1,947 76	1,958 56
Yamaska River.....	20,984 25				20,984 25
Generally.....	17,125 29			14,938 35	32,063 64
Totals, Quebec.....	368,240 06	858,800 91	35,155 78	48,949 76	1,310,946 51

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and maintenance.	Total.
HARBOURS AND RIVERS—Con.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Ontario.</i>					
Amherstburg—dredging.....	29,970 73				29,970 73
Barrie (Allandale).....		1,497 53			1,497 53
Barrie.....			306 73		306 73
Barry's Bay (Maddawaska River).....			358 67		358 67
Bayfield (North pier).....	2,359 50		475 01		2,834 51
Bayfield (South pier).....			807 67		807 67
Bayville.....		527 90			527 90
Beaverton.....	3,831 50	2,244 56			6,076 06
Belle River.....	4,196 25	560 28			4,756 53
Belleville.....	745 01				745 01
Blanche River (Lake Temiscamingue).....		7,898 73			7,898 73
Blenheim.....			46 77		46 77
Blind River wharf.....	100 00		59 22		159 22
Bowmanville.....	649 03				649 03
Bracebridge wharf.....		3,015 21			3,015 21
Bronte.....		3,999 91			3,999 91
Bruce Mines.....			47 65		47 65
Burlington channel and bridge.....		10,304 98	6,838 25	1,926 10	19,069 33
Callender.....			500 00		500 00
Cobourg.....			4,999 93		4,999 93
Cockburn Island.....			226 01		226 01
Colborne (Lakeport).....		35 24			35 24
Colchester.....		5,050 80			5,050 80
Collingwood.....	88,589 10	1,429 28			90,018 38
Collingwood graving dock.....				80,000 00	80,000 00
Crowe's Landing.....		1,491 51			1,491 51
Cumberland.....			387 09		387 09
Depot Harbour.....	4,890 00	449 60			5,339 60
Dunnet's Landing.....		820 19			820 19
Dyer's Bay.....			699 26		699 26
Echo Bay.....		20,359 00			20,359 00
Fort William (Kaministiquia River).....	68,599 86		6,821 39		74,221 25
Goderich.....	13,701 90	34,625 07			48,326 97
Graham's Bay.....		6,093 14			6,093 14
Grand Bend, breakwater.....		11,977 32			11,977 32
Haileybury (Lake Temiskamingue).....	290 00	3,599 28			3,889 28
Hamilton Harbour.....		1,003 94			1,003 94
Hawkesbury.....	20,700 28				20,700 28
Head River.....		1,593 11			1,593 11
Honora wharf.....		1,124 56			1,124 56
Holland River.....			573 30		573 30
Indian River.....	1,724 48				1,724 48
Jeanette's Creek, wharf.....		3,957 17			3,957 17
Kingston.....	2,417 98				2,417 98
Kingston graving dock.....				7,140 85	7,140 85
Kincardine.....	3,935 00		1,056 99		4,991 99
Kingsville.....	42 15	4,788 64			4,830 79
Lancaster South.....			295 07		295 07
Leamington.....			999 33		999 33
Little Current.....		50,070 89			50,070 89
Mallorytown.....			489 50		489 50
L'Orignal.....			817 48		817 48
Matchedash Bay.....	18,011 50				18,011 50
Mesford.....		117,656 58			117,656 58
Midland.....	53,344 10				53,344 10
Newcastle.....	1,034 77		3,000 95		4,035 72
New Liskeard (Lake Temiskamingue).....	2,606 67				2,606 67
Neebing River.....	15,065 21				15,065 21
Northport.....	7,638 00				7,638 00
Oakville.....			68 52		68 52
Olipphant.....			94 50		94 50
Orillia.....			6 88		6 88
Oshawa.....			699 99		699 99
Owen Sound.....	19,318 20				19,318 20
Parry Sound.....		9,083 20			9,083 20
Pembroke.....		1,230 99			1,230 99
Petawawa wharf.....		1,187 00			1,187 00
Penetanguishene.....	6,168 14				6,168 14
Pickering.....	1,417 00				1,417 00
Point Edward (Sarnia).....	17,928 36				17,928 36
Port Arthur.....	151,573 28		6,902 81		158,476 09
Port Bruce.....	950 59	3,997 17			4,947 76
Port Burwell.....	34,565 35	10,995 29			45,560 64
Port Colborne.....		115,182 93			115,182 93
Port Dover.....			5,511 15		5,511 15

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
[HARBOURS AND RIVERS—Con.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Ontario—Con.</i>					
Port Elgin.....	148 00		3 00		151 00
Port Hope.....		5,005 11			5,005 11
Port Rowan.....			2,582 50		2,582 50
Port Stanley.....	35,055 26	7,855 86			42,911 12
Rama.....		499 97			499 97
Richard's Landing.....			66 86		66 86
River St. Lawrence (dredging at Wolfe Island).....	809 27				809 27
River Otonabee.....	11,967 02				11,967 02
River Otonabee, wharf at Bensford bridge.....		847 66			847 66
River Ottawa, near Hawkesbury.....	3,094 08				3,094 08
Rondeau Harbour.....	24,220 02		12,472 27		36,692 29
Sarnia.....	8,396 95				8,396 95
Saugeen River.....	24,288 90		211 89		24,500 79
Sault Ste. Marie.....		5,852 76			5,852 76
Seyern River, Macdonald's chute.....		500 00			500 00
Shrewsbury (Rondeau).....			9 75		9 75
Silverwater.....		1,420 09			1,420 09
Southampton.....			88 50		88 50
Sturgeon River.....	2,698 07				2,698 07
St. Joseph (Co. Huron).....			569 75		569 75
Stokes Bay wharf.....		1,500 00			1,500 00
Sydenham River.....	45 00				45 00
Tenby Bay (St. Joseph Island).....			711 68		711 68
Thessalon.....		4,617 26			4,617 26
Thornbury.....			1,000 08		1,000 08
Toronto Harbour, eastern entrance.....		28,002 97			28,002 97
Toronto Harbour, extension of break-water.....		6,527 27			6,527 27
Treadwell.....		3,599 63			3,599 63
Trenton Harbour.....	11,359 28				11,359 28
Trent River, near Trenton.....	10,276 50				10,276 50
Washago.....			95 00		95 00
Wendover.....			22 50		22 50
Wiarton.....	17,999 33				17,999 33
Generally.....	11,567 53			5,457 39	17,024 92
Totals, Ontario.....	738,289 15	504,079 58	59,723 90	44,524 34	1,346,616 97
<i>Manitoba.</i>					
Arnes Wharf.....		1,062 84			1,062 84
Assiniboine River (St. James Rapid).....	2,424 80				2,424 80
Gimli.....			2,991 82		2,991 82
Delta.....	911 82				911 82
Fairford River.....	15 00				15 00
Lake Francis (outlet).....	5,627 73	2,103 54			7,731 27
Red River (mouth).....	16,700 12				16,700 12
Selkirk.....		1,324 00			1,324 00
St. Andrew's Rapids (Red River).....				2,897 12	2,897 12
White Mud River.....	1,403 89				1,403 89
Winnipegosis (dredging channel Mossy River).....	4,995 71				4,995 71
Winnipeg River.....		182 05			182 05
Generally.....	6 80			1,466 02	1,472 82
Totals, Manitoba.....	32,085 87	4,652 43	2,991 82	4,363 14	44,093 26
<i>North-west Territories.</i>					
Last Mountain, Craven dam.....		987 57	106 15		1,093 72
North Saskatchewan River.....			368 33		368 33
Generally.....				287 61	287 61
Totals, North-west Territories.....		987 57	474 48	287 61	1,749 66

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
<i>British Columbia.</i>					
Anderson Lake.....		1,194 18			1,194 18
Campbell River, wharf.....		2,440 94			2,440 94
Chilliwack, wharf.....	14,210 45	988 98			15,199 43
Columbia River at Revelstoke.....		14,652 95			14,652 95
Columbia River, above Revelstoke.....		4,951 39			4,951 39
Columbia River, below Revelstoke.....		4,128 33			4,128 33
Columbia River, above Golden.....		2,990 96			2,990 96
Columbia River, below Golden.....		2,974 42			2,974 42
Columbia River, between Upper and Lower Arrow Lakes.....	4,796 09				4,796 09
Coquitlam River.....		931 21			931 21
Courtney River.....		4,832 87			4,832 87
Duncan River.....		1,945 91			1,945 91
Esquimalt, graving dock.....				13,022 71	13,022 71
Fraser River.....	28,520 75	17,339 04			47,859 79
Kennedy Lake.....		1,243 55			1,243 55
Kicking Horse River.....		2,968 98			2,968 98
Kootenay River at Procter.....	2,497 18				2,497 18
Langly, wharf.....		5,108 58			5,108 58
Mission City, wharf.....		2,376 51			2,376 51
Mount Lehman, wharf.....		352 80			352 80
North Thompson River.....	4,852 33				4,852 33
Port Hammond.....		2,663 78			2,663 78
Salmon River.....		993 49			993 49
Skeena River.....		5,075 54			5,075 54
Spallumcheen River.....		378 35			378 35
Victoria Harbour.....	24,989 10				24,989 10
Whonnock, wharf on Fraser river.....		2,687 51			2,687 51
William's Head, quarantine station.....		9,908 17			9,908 17
Yakoun River, Graham island.....		2,467 90			2,467 90
Generally.....				3,121 46	3,121 46
Totals, British Columbia.....	79,865 90	97,596 34		16,144 17	193,606 41
<i>Yukon Territory.</i>					
Yukon and Lewes River.....		14,976 64			14,976 64
<i>Harbours and Rivers Generally.</i>					
General expenses of Staff, &c.....	5,055 83			8,422 90	13,478 73
DREDGES AND DREDGING PLANT					
Maritime Provinces.....		192,780 05			192,780 05
Ontario and Quebec.....		134,986 41	61,245 59		196,235 00
Manitoba.....		23,699 30	5,461 17		29,160 47
British Columbia.....		46,701 85	8,224 77		54,926 62
Totals, Dredges and Dredging Plant.....		398,167 61	74,934 53		473,102 14
SLIDES AND BOOMS.					
River Saguenay.....		20,253 42		1,566 82	21,820 24
River St. Maurice.....		36,877 17	1,655 71	44,175 28	36,877 17
River Richelieu (Belœil).....				186 56	186 56
Ottawa District—					
Ottawa River.....		924 00		28,378 93	29,302 93
Gatineau River.....		2,897 42		600 00	3,497 42
Coulonge River.....		1,362 02			1,362 02
Black River.....		147 33			147 33
Dumoine River.....		1,585 71			1,585 71
Madawaska River.....		146 42			146 42
Petawawa River.....		1,702 24			1,702 24
St. John's Booms.....		227 42		2,517 24	227 42
Trent and Newcastle District.....			2,306 71		4,823 95
Collection Slide and Boom Dues.....				4,359 95	4,359 95
Generally.....		125 00			125 00
Totals, Slides and Booms.....		57,255 59	12,954 98	81,784 78	151,995 35

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Im- provements.	Repairs.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
ROADS AND BRIDGES.					
<i>Quebec and Ontario.</i>					
Bryson Bridge, Ottawa River.....		14,856 22			14,856 22
Ottawa, Laurier Bridge.....					
Ottawa—City bridges and streets main- tained by Government—					
Chaudiere bridge and approaches.....			6,312 21		6,312 21
Laurier bridge.....			8 25		8 25
Sappers and Dufferin bridges and Wel- lington street.....			4,319 04	5,372 64	9,691 68
Lighting all the above.....				1,878 00	1,878 00
Portage du Fort Bridge, over the Ottawa			3,377 20		3,377 20
York Bridge, Grand River.....			3,114 35		3,114 35
Chapeau Bridge.....			552 84		552 84
Generally.....				685 03	685 03
<i>North-west Territories, Manitoba and British Columbia.</i>					
Athabaska Landing, Lesser Slave Lake and Peace River Road.....		11,284 11			11,284 11
Battleford Bridge, Battle River.....		50,486 79			50,486 79
Edmonton Bridge, Saskatchewan River.....			183 75		183 75
Shellmouth Bridge, Assiniboine River.....		217 44			217 44
Pitt River.....					
Whitemouth Bridge.....		74 43			74 43
Generally.....				637 23	637 23
Totals, Roads and Bridges.....		76,918 99	17,867 64	8,572 90	103,359 53

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
TELEGRAPH LINES.				
<i>Nova Scotia.</i>				
Cape Breton lines.....	10,275 97		11,480 36	21,756 33
<i>Prince Edward Island.</i>				
P. E. Island and mainland (subsidy).....			6,999 66	6,999 66
<i>New Brunswick.</i>				
Bay of Fundy line.....			1,571 55	1,571 55
Ecuminae line.....			466 09	466 09
<i>Quebec.</i>				
Anticosti, Gaspé lines.....		1,718 30	5,753 65	7,471 95
Belle Isle, Chateau Bay (Marconi system).....	1,287 25			1,287 25
Grosse Isle (Marconi system).....	5,006 08			5,006 08
Father Point (subsidy).....			500 00	500 00
Isle aux Coudres line (subsidy).....		70 85	150 00	220 85
Island of Orleans, Isle aux Grues and Grosse Isle.....	1,601 49		1,242 26	2,843 75
North Shore, east of Beresimis.....	13,504 00	1,367 87	13,092 91	27,964 78
west.....	978 40	735 78	8,651 57	10,365 75
Magdalen Islands lines.....			3,770 50	3,770 50
Saguenay River lines, east side.....	6,752 46			6,752 46
west side.....	947 13			914 13
Generally, Gulf and Maritime Provinces.....			6,959 65	6,959 65
expenses ss. Tyrian.....		33,964 72	44,483 51	78,448 23
<i>Ontario.</i>				
Pelee Island line.....		2,631 00	198 09	2,829 09
<i>North-west Territories.</i>				
Edmonton to Athabaska Landing.....	1,814 46			1,814 46
Fort Saskatchewan and Star line (roadway).....	911 66			911 66
Qu'Appelle-Edmonton-Moosejaw line.....		3,153 10		3,153 10
Victoria-Andrew loop line.....	1,570 00			1,570 00
Wood Mountain to Willow Bunch.....	384 90			384 90
Generally, N. W. T.....			26,001 62	26,001 62
<i>British Columbia and Yukon Territory.</i>				
Alberni-Cape Beale.....		3,634 21	328 65	3,962 86
Alberni-Clayoquot.....			2,670 86	2,670 86
Ashcroft-Dawson.....		705 41	207,803 15	206,508 56
Golden-Windermere.....			2,258 10	2,258 10
Kelowna-Penticton.....	6,670 01			6,670 01
Nicola-Penticton.....	4,760 28		5,162 64	9,922 92
Nanaimo-Comox.....			2,729 08	2,729 08
Vancouver-Salt Spring.....	647 38		407 43	1,054 81
Vernon-Kelowna.....			1,924 55	1,924 55
Victoria-Cape Beale.....			4,032 80	4,032 80
Generally, British Columbia.....			526 85	526 85
Telegraph service, generally.....			2,026 92	2,026 92
Totals, Telegraphs.....	57,111 47	47,981 24	361,192 45	466,285 16
MISCELLANEOUS.				
Arbitrations and awards.....			2,532 05	2,532 05
Cement testing laboratory.....			4,813 34	4,814 34
Surveys and inspections—				
Georgian Bay to Montreal waterway.....			243,789 45	243,789 45
Ottawa River, headwaters and tributaries.....			4,193 75	4,193 75
Generally.....			67,917 56	67,917 56
Secretary and Accountant's staff.....			55,007 76	55,007 76
Chief Architect's staff.....			44,041 43	44,041 43
Chief Engineer's staff.....			112,210 41	112,210 41
Superintendent Telegraph Service staff.....			5,592 49	5,592 49
Departmental Photographer.....			849 98	849 98
Technical and other books of reference.....			503 57	503 57
Transportation Commission.....			14,883 92	14,883 92
Deep Waterways Commission.....			23,498 93	23,498 93
Gratuity to widow of late Major H. A. Gray.....			417 85	417 85
Samuel McDowell.....			1,000 00	1,000 00
mother of late R. A. McGrath.....			200 00	200 00
widow of late Wm. H. Gray.....			8 00	78 00
Wm. Young.....			100 00	100 00
heirs of late P. Purcell.....			200 00	200 00
Public Works Agency, B. C.....			2,592 58	2,592 58
Totals, Miscellaneous.....			585,423 67	585,423 67

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT A.—EXPENDITURE—*Concluded.*

Name of Work.	Dredging.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
RECAPITULATION.		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Totals, Public Buildings—					
Nova Scotia.....		154,374 79	10,738 57	34,113 18	199,226 54
Prince Edward Island.....		15,454 15	3,598 24	6,518 75	25,571 14
New Brunswick.....		98,471 53	8,923 71	30,602 67	137,997 91
Quebec.....		276,543 40	32,405 78	110,668 18	419,617 36
Ontario.....		1,213,661 38	343,947 32	359,692 61	1,917,301 31
Manitoba.....		507,906 45	13,600 32	30,023 40	551,530 17
North-west Territories.....		182,721 75	10,833 04	26,433 08	219,987 87
British Columbia.....		124,288 73	12,509 18	27,462 46	164,260 37
Yukon.....				78,293 86	78,293 86
Public buildings generally.....				29,697 06	29,697 06
Totals, Harbours and Rivers—					
Nova Scotia.....	54,950 65	342,535 49	35,265 20	11,576 35	444,327 69
Prince Edward Island.....	17,431 67	28,012 18	6,764 00	1,612 44	53,820 29
New Brunswick.....	153,293 81	240,444 97	4,946 48	1,576 36	400,261 62
Quebec.....	368,240 06	858,600 91	35,155 78	48,949 76	1,310,946 51
Ontario.....	738,289 15	504,079 58	59,723 90	44,524 34	1,346,616 97
Manitoba.....	32,085 87	4,652 43	2,991 82	4,363 14	44,093 26
North-West Territories.....		987 57	474 48	287 61	1,749 66
British Columbia.....	79,865 90	97,596 34		16,144 17	193,606 41
Yukon.....		14,976 64			14,976 64
Harbours and Rivers generally.....	5,055 83			8,422 90	13,478 73
Totals, dredges and dredging plant.....		398,167 61	74,934 53		473,102 14
Totals, slides and booms.....		57,255 59	12,954 98	81,784 78	151,995 35
" roads and bridges.....		76,918 99	17,867 64	8,572 90	103,359 53
" telegraph lines.....		57,111 47	47,981 24	361,192 45	466,285 16
" miscellaneous.....				585,423 67	585,423 67
Grand totals of expenditure.....	1,449,212 94	5,254,761 95	735,616 21	1,907,936 12	9,347,527 22

SESSIONAL PAPER No. 19

PART II.—STATEMENT B.—EXPENDITURE.

Name of Building.	Rents.	Salaries of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Nova Scotia.</i>						
Amherst post office, &c.		410 97	291 77	358 33	32 00	1,093 07
Annapolis post office, &c.		379 63	273 37	147 00	40 00	840 00
Antigonish post office, &c.		400 51	138 00	94 50	5 00	638 01
Ariehat post office, &c.		142 18	239 00	18 05		399 23
Baddeck post office, &c.		240 83	132 30	37 85		410 98
Dartmouth post office, &c.		229 13	84 68	145 88	27 40	487 09
Digby post office, &c.		404 63	209 75	411 95	60 00	1,086 33
Guysborough post office, &c.		27 04	142 20	49 65		218 89
Halifax, Asst. Receiver General's Office.	1,417 40		151 63	95 20		1,664 23
examining warehouse.	1,000 00	488 84	269 80	77 72	40 09	1,876 45
Dominion building.		2,587 05	971 02	3,089 60	1,098 42	7,726 09
drill shed.		1,150 00				1,150 00
engineer's office.	362 00					362 00
immigrant shed.		615 00	799 33	1,054 60	860 92	3,329 85
immigrant detention building.	450 00			80 50		530 50
Lawlor's Island quar. station.			120 27			120 27
Kentville post office, &c.		366 63	211 50	272 00	50 00	900 13
Liverpool post office, &c.		383 88	178 00	152 26	18 00	732 14
Lunenburg post office, &c.		306 33	230 50	145 45	59 00	741 28
New Glasgow post office, &c.		371 85	227 98	386 12	100 00	1,085 95
North Sydney post office, &c.		366 63	207 98	511 77	35 25	1,121 63
Pictou custom house.		4 41	64 80	23 43	75 00	167 64
post office.		481 76	389 81	281 95	75 00	1,228 52
Springhill post office, &c.		433 70	234 20	417 95	30 00	1,115 85
Sydney post office, &c.		402 14	313 60	1,088 98	58 50	1,863 22
Sydney Mines post office, &c.		83 86		8 25		92 11
Truro post office, &c.		396 58	231 46	360 03	60 00	1,048 07
Windsor post office, &c.		384 55	354 92	151 50	50 00	940 97
Yarmouth post office, &c.		367 98	309 50	393 20	72 00	1,142 68
Totals for Nova Scotia (carried to Statement A, page 7).....	3,229 40	11,406 11	6,777 37	9,853 72	2,846 58	34,113 18
<i>Prince Edward Island.</i>						
Charlottetown Dominion building.	50 00	2,184 38	761 50	1,785 13	225 00	4,986 01
engineer's office.	194 00					194 00
Montague post office.		155 61	155 34	31 11		342 06
Summerside post office.		390 84	434 33	171 51		996 68
Totals for Prince Edward Island (carried to Statement A, page 7)	244 00	2,710 83	1,351 17	1,987 75	225 00	6,518 75
<i>New Brunswick.</i>						
Bathurst post office, &c.		434 80	417 82	630 50		1,483 12
Campbellton post office, &c.		98 11				98 11
Carleton, St. John West, post office, &c.		138 98	78 08	188 77	8 50	414 33
Chatham post office, &c.		318 18	238 63	482 30	18 00	1,057 11
Dalhousie post office, &c.		371 73	301 40	22 38	3 75	699 26
Fredericton post office, &c.		373 13	309 12	852 87	51 00	1,586 12
Marysville post office, &c.		137 50	128 62			266 12
Moncton post office, &c.		385 74	320 25	417 83	134 00	1,257 82
Newcastle post office, &c.		392 97	325 77	236 83		955 57
Richibucto post office, &c.		387 03	313 00	168 98		869 01
St. John custom house.	22 00	1,813 25	1,735 95	616 57	765 68	4,953 45
cattle quarantine station.		273 00	352 87			625 87
detention hospital.		243 00			75 00	318 00
immigrant building.	52 66	1,200 60	2,149 60	619 13	100 19	5,122 18
post office.		1,795 21	352 84	2,835 77	641 92	5,625 74
post office north.	583 33			3 35		586 68
savings bank.			255 09	110 73	17 52	383 34
Tracadie lazaretto.		242 70	1,223 78			1,466 48
St. Stephen's post office, &c.		366 63	165 90	333 30	64 00	929 83
Sussex post office, &c.		278 20	467 60	119 97	100 00	965 77
Woodstock post office, &c.		390 63	280 07	121 25	34 00	825 95
Totals for New Brunswick (carried to Statement A, page 8).....	1,657 99	9,641 39	9,416 39	7,760 53	2,013 56	30,489 86

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Quebec.</i>						
Acton Vale post office.....		198 42	186 78	150 00	8 00	543 20
Aylmer post office.....		108 63	276 20	80 00	32 00	494 83
Berthierville post office.....		8 69	150 50	49 44	32 00	240 63
Buckingham post office.....		119 70	243 81	131 65	55 80	550 96
Chicoutimi engineer's office.....	300 00					300 00
Coaticook post office, &c.....		380 38	255 40	327 90	40 00	1,006 68
Drummondville post office, &c.....		297 72	181 87	54 90	17 93	562 42
Dundee custom-house.....			33 00			33 00
Granby post office, &c.....		283 42	249 30	92 42	75 00	700 14
Fraserville post office, &c.....		351 63	380 07	147 08	165 00	1,063 73
Hochelaga post office.....		195 61	195 03	162 43	15 52	568 49
Hull post office.....		140 60	284 01	685 99	244 65	1,355 15
Isle Verte, engineer's office.....	21 00					21 00
Joliette post office, &c.....		404 35	256 60	120 90	108 00	889 85
Lachine post office.....		132 26	159 00	72 70	29 62	393 48
Laprairie post office.....		143 88	176 63	41 27	42 50	404 28
L. Assomption post office.....		154 63	191 25	11 12	50 00	407 00
Lévis, engineer's office.....	35 00					35 00
Longueuil post office.....		99 20		23 08		122 28
Montmagny post office.....	138 00					138 00
Montreal, civil service examiner's office.....	100 00					100 00
custom-house.....		3,403 25	1,029 69	804 07	256 14	5,493 15
Dominion public buildings.....		1,700 05				1,700 05
drill hall.....		827 50				827 50
engineer's office.....	1,192 04			15 36	88 48	1,295 88
examining warehouse.....	27 50	9,079 51	1,486 84	3,462 26	703 73	14,759 84
immigration office.....	847 30		402 02	106 64	61 97	1,417 93
inland revenue office.....		607 69	303 34	115 28	101 91	1,128 22
P. O. branch, St. Lawrence St. post office.....	300 00		32 76	62 10	15 52	410 38
post office, station A, St. Catherine St. East.....	373 00	13,258 02	1,148 94	10,976 17	867 24	26,623 37
receiving house, "Northern" Windsor station, B post office.....	100 00	2 00			44 62	46 62
Westmont letter carriers.....	3,133 33	3 75		38 45	67 90	3,243 43
Point St. Charles, Letter C Dépot.....	937 50					937 50
Quebec citadel buildings.....	200 00					200 00
clerk of works office, P. O. custom-house.....	33 85	570 00	584 49	443 74		1,632 08
culler's office.....	52 50	48 50				97 00
drill shed.....		540 80	386 60			927 40
engineer's office.....		808 89	1,136 84	762 39	800 00	3,503 12
examining warehouse.....	515 67	44 00		11 50	30 56	571 17
gas inspector's office.....		1,635 56	952 46	129 86	450 00	3,167 88
immigration building.....	23 50	50 00		1 00		51 00
observatory.....			1,089 17	579 26		1,668 43
post office building.....			87 04	50 00		137 04
quarantine station, trachoma.....	678 31	1,782 51	733 51	953 59	750 00	4,897 92
Queen's wharf building, marine office.....	173 50		886 75	592 25	200 00	1,852 50
signal service, inspector's office.....			667 94		750 00	1,417 94
weights and measures office.....		3 75		7 34		11 09
St. Roch post office.....		1 25	49 39	64 76		115 40
Peribonka immigrant shed.....		275 00	120 00			395 00
Richmond post office, &c.....		355 80	380 86	251 00	25 00	1,012 66
armoury.....				38 00		38 00
Rimouski post office, &c.....		148 47	293 24	51 44	37 50	530 65
Roberval immigration shed.....		275 00	300 00	57 46	15 00	647 46
Sherbrooke post office, &c.....		458 00	476 73	638 51	50 00	1,623 24
Sorel post office, &c.....		509 72	410 98	881 80	250 00	2,052 50
St. Cunegonde post office.....	1,880 00					1,880 00
St. Henri post office.....			128 30	88 74	29 28	246 32
St. Eustache post office.....	144 00					144 00
St. Hyacinthe post office.....		493 27	390 00	540 30	150 00	1,573 57
inland revenue office.....		376 90	220 92	20 82	100 00	718 64
St. Jérôme post office, &c.....		376 63	320 53	201 18	54 00	952 34
St. John's post office, &c.....		328 03	123 71	253 67	60 00	765 41
St. Louis du Mile End post office.....		213 05	159 50	82 50	16 65	471 70
Terrebonne post office.....		115 32	54 29		7 50	177 11
Thetford Mines post office.....		165 75	152 53	295 59	9 75	623 62
Three Rivers custom-house.....		419 65	477 92	397 57	136 00	1,431 14
post office.....		468 26	359 52	827 28	62 00	1,717 06
Valleyfield post office, &c.....	619 00	411 29	313 50	69 85		1,413 64

SESSIONAL PAPER No. 19

PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Quebec—Concluded.</i>						
Victoriaville post office, &c.	1 00	124 59	322 50	198 23	50 04	696 36
West Farnham post office.		38 53	84 10	100 75	10 00	233 38
Totals, Quebec (carried to Statement A, page 9).	11,826 00	42,929 21	19,172 32	20,358 58	7,217 71	107,503 82
<i>Ontario.</i>						
Alexandria post office.	40 00	454 60	98 52	109 00	15 00	717 12
Almonte post office, &c.		377 03	209 80	85 62	75 00	747 45
Amherstburg post office, &c.		377 58	207 00	171 55	35 00	791 13
Arnprior post office, &c.		407 45	305 76	222 29	33 32	968 82
Barrie post office, &c.		384 36	230 30	232 63	25 00	872 29
Belleville post office, &c.		640 09	659 51	979 51	83 25	2,362 36
Berlin post office, &c.		391 23	317 90	324 13	19 38	1,052 64
Bowmanville post office, &c.		404 54	192 85	186 74	10 00	794 13
Brampton post office, &c.		383 48	186 63	283 77	31 56	885 38
Blount post office.			47 25			47 25
Brantford post office, &c.		575 39	465 85	335 73	34 20	1,411 17
Bridgeburg post office, &c.		75 00	1 75	16 81		93 06
Brockville post office, &c.		383 01	380 70	609 66	170 00	1,543 37
drill hall.				91 80		91 80
Burford armoury.		79 00	64 25			143 25
Carleton Place post office.		281 75	141 45	68 51		491 71
Cayuga post office.		47 36	127 53	59 15		234 04
Chatham post office, &c.		505 66	271 79	304 95	42 50	1,124 90
Clinton post office, &c.		46 51	227 94	194 56	7 00	476 01
Cobourg drill hall.					21 83	21 83
post office.	150 00	386 51	374 70	585 38	45 49	1,542 08
Cornwall post office.		455 15	322 00	699 70	75 00	1,551 85
Deseronto post office.		467 43	276 15	475 28	39 00	1,257 86
Dundas post office.	375 00	45 76	297 73	60 00		778 49
Fort William post office, &c.		379 68	383 20	405 78	73 45	1,222 09
Galt post office.		393 98	205 05	243 70	32 00	874 73
Gananoque custom-house.			10 00	94 00		104 00
post office.		1 25	242 50	141 00	5 00	389 75
Goderich post office, &c.		388 78	235 17	215 09	60 00	899 04
Guelph post office.		418 78	583 50	646 67	46 80	1,695 75
Hamilton post office, &c.		1,803 35	1,140 05	2,339 18	1,092 35	6,374 93
Hawkesbury post office.			143 46			143 46
Ingersoll post office, &c.		419 58	296 59	437 69	17 73	1,171 59
Kenora post office.		390 73	325 43	302 97	78 60	1,097 73
Kingston custom-house.		228 15	285 50	139 36	61 20	714 21
drill hall.		600 00				600 00
exam. warehouse.			39 90		12 95	52 85
inland revenue office.				37 10	19 85	56 95
military college.		3,355 83				3,355 83
post office.		587 10	305 45	833 74	48 06	1,774 35
Lindsay post office.		374 88	234 88	101 77	30 00	741 53
London custom-house.		1,185 36	669 19	727 51	140 00	2,726 06
drill hall.		776 18	6 00			782 18
engineer's office.	541 50					541 50
post office.		1,159 28	733 25	2,340 52	80 00	4,313 05
Napanee post office.		428 38	209 65	193 10	69 44	900 57
Niagara Falls post office, &c.		404 88	300 60	325 00	40 00	1,070 48
Orangeville post office, &c.		371 91	226 50		20 00	618 41
Orillia post office, &c.		320 76	211 00	88 64	32 50	652 90
Oshawa post office, &c.					5 00	5 00
Ottawa astronomical observatory.			508 00	317 20		825 20
bacteriological laboratory.			88 83	260 00		348 83
experimental farm.			1,505 97	154 23		1,660 20
geological museum.		900 00	992 00	799 18		2,691 18
Major's Hill greenhouse.		300 00	349 80	35 00		684 80
national art gallery, &c.		180 00	126 00	37 50		343 50
parliamentary and departmental buildings.		33,425 66	34,840 19	24,687 66		92,953 51
post office.		1,500 00	1,444 74	387 00		3,331 74
printing bureau.		9,275 27	5,064 37	1,429 39		15,769 00
supreme court.		1,536 00	811 90	180 41		2,528 31
workshops D.P.W. (new).		1,596 00	1,265 00	654 13		3,515 13
Ottawa rented buildings.						
Albert St. (Railway Mail Service Offices).	600 00			41 00		641 00

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
<i>Ontario—Concluded.</i>	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Ottawa rented buildings—Con.						
Cliff St. observatory.....				16 00		16 00
Metcalfe St. (Labour Dept.).....	1,440 00			153 50		1,593 50
" (Militia D.O.C.).....	541 67			28 23		569 90
" (Surveyor Gen. office).....		300 00	437 92	252 00		989 92
Queen St. (Railway Com. Building).....	5,300 00	1,500 00	619 80	548 79		7,968 59
" (Exhibition Com. offices).....	1,000 00		91 00	80 50		1,171 50
" Imperial Building.....	4,200 00	600 00		290 00		5,090 00
" Dominion analysts offices.....			177 24			177 24
Rideau St. Corry Building.....	8,190 01			360 00		8,550 01
Slater St., Militia Building.....	18,933 60	1,200 00	3,659 01	592 67		24,385 28
" Canadian Building.....		217 86	2,229 92			2,447 78
Sparks St., Census Building.....	6,500 00	800 00	562 50	183 50		8,046 00
" Slater Chambers.....						720 00
" Egan Building.....	200 00					200 00
Sussex St., Geological Survey Annex.....	3,780 00					3,780 00
" French translators' offices.....	600 00		70 00	158 72		828 72
" Marine Stores.....			136 50			136 50
Wellington St., Customs Statistical offices.....	1,750 00	300 00	333 00	218 50		2,601 50
Wellington St., workshops of D.P.W. (old).....	1,514 00					1,514 00
Wellington St., N.W. Mounted Police stores.....	855 00		210 00	84 00		1,149 00
Wellington St., Langevin Block.....	10 00					10 00
Wellington St., Dairy Commissioner's office.....			66 00			66 00
Wellington St., Forestry Commis- sioner's office.....	287 50					287 50
Wellington St., Gas Inspector's office.....				9 64		9 64
Wellington St., Thistle Building.....	1,100 00			50 50		1,150 50
Government buildings generally— Wire line for electric clocks.....	263 08					263 08
Paris post office, &c.....		371 88	144 88	182 55	63 60	762 91
Pembroke post office, &c.....		370 38	24 50	198 00	28 00	620 88
Peterboro' custom-house.....		282 30	327 53	190 40	50 00	850 23
" engineer's office.....	78 75					78 75
" post office.....		288 50	266 91	373 50	75 00	1,003 91
Petrolia post office, &c.....		383 23	228 21	208 75	37 25	857 44
Pictou post office, &c.....		432 71	237 25	120 18	27 00	817 14
Port Arthur post office, &c.....	87 50	293 25	270 30	132 84		783 89
" engineer's office.....	146 00					146 00
Port Colborne post office.....	60 00	255 00		177 65	10 00	502 65
" engineer's office.....	90 00					90 00
Port Hope post office, &c.....		366 63	236 75	533 90	23 35	1,160 63
Prescott custom-house.....			99 00			114 00
Prescott post office.....		384 35	254 10	196 51	105 00	939 96
Sarnia post office, &c.....		441 63	343 28	351 56	44 00	1,180 47
Sault Ste. Marie post office, &c.....		363 34	570 50	138 60		972 44
Smith's Falls post office.....		371 53	205 60	63 66	85 00	825 79
Stratford post office, &c.....		612 90	336 29	309 18	58 00	1,316 37
Strathroy post office, &c.....		413 88	194 54	234 88	15 98	859 28
St. Catharines drill hall.....		150 00		8 96		158 96
" post office, &c.....	19 70	467 91	329 64	346 62	61 48	1,225 35
St. Thomas post office.....		387 02	312 00	346 05	21 84	1,066 91
Toronto asst. receiver general's office.....		335 00		92 24		427 24
" civil ser. exam. office.....	45 00					45 00
" custom-house.....		1,587 78	531 11	344 48	43 84	2,507 19
" drill shed.....		1,275 60				1,275 60
" engineer's office.....	710 00					710 00
" examining warehouse.....		4,777 89	1,524 78	465 34	69 82	7,547 83
" inland revenue office.....		662 40	278 96	168 63	26 99	1,136 98
" post office.....	229 00	7,712 01	1,329 85	3,107 85	425 03	12,803 74
" post office, station A.....		1,241 70		1,418 76		2,660 46
" post office, station B.....	125 00	195 50		477 01		797 51
" post office, station C.....		628 64	168 58	871 20	13 31	1,681 73
" post office, station H.....				2 45	2 90	5 35
" Junction post office.....		499 48	201 96	288 34	28 50	1,018 28
" steamboat inspector's office.....	720 00					720 00
Trenton post office.....		417 43	217 00	200 00	75 00	909 43
Walkerton post office.....		372 80	247 38	256 33	31 00	907 51
Windsor drill hall.....		400 00				400 00
" post office, &c.....		783 13	511 60	1,099 75	96 00	2,490 48
Woodstock post office, &c.....		404 41	326 61	493 55	35 20	1,259 77
Totals Ontario (carried to State- ment A, page 11).....	61,182 31	102,718 71	77,483 03	61,086 01	4,295 49	306,765 55

SESSIONAL PAPER No. 19

PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Manitoba.</i>						
Brandon experimental farm.....			285 50			285 50
" immigrant building.....			270 55	128 17	57 44	456 16
" post office, &c.....		589 00	941 88	1,087 44	100 00	2,718 32
Dauphin immigrant station.....			155 25	6 52		161 77
" Dom. lands office.....	297 00					297 00
East Selkirk immigrant shed.....	5 00		546 00			551 00
Elkhorn immigrant shed.....	90 00					90 00
Minnedosa Dom. lands office.....	225 00		162 15			387 15
Portage la Prairie post office.....		503 27	750 10	271 25	3 00	1,527 62
St. Andrew's Rapids engineers office.....	55 00					55 00
Teulon immigrant building.....	45 00					45 00
Winnipeg custom-house.....		374 66	714 84	135 30	115 65	1,340 45
" clerk of works office.....	50 00	76 00		9 00	3 60	138 60
" Dom. lands office.....			305 01	20 79	39 75	365 55
" engineer's office.....	468 75					468 75
" examining warehouse.....		3 90	247 48	122 43	5 65	379 46
" immigration hospital.....			441 25	626 23	25 80	1,093 28
" new immigration building.....			103 50	902 04		1,005 54
" post office, Maple street.....				124 28		124 28
" immigrant shed.....	800 00		1,886 46		168 45	2,654 91
" post office.....	1,350 00	3,798 16	4,322 02	5,237 21	424 09	15,131 48
" C. P. R. depot.....		20 00				20 00
" weights and measures office.....	600 00					600 00
Totals for Manitoba (carried to Statement A, page 11).....	3,785 75	5,364 99	11,131 99	8,670 66	943 43	29,896 82
<i>Northwest Territories.</i>						
Alameda Dom. lands office.....	150 00		71 20			221 20
Battleford Dom. lands office.....	385 00					385 00
" immigration building.....	91 00		86 12			177 12
Banff museum.....	144 00			3 00		147 00
Calgary court-house, &c.....		606 16	367 15	283 08	455 00	1,711 39
" custom-house.....	363 00			55 44		418 44
" engineer's office.....	205 00					205 00
" Dom. lands and reg. office.....	40 00	6 75	5 25	5 40		57 40
" immigrant building.....			123 59	16 19		139 78
" post office.....	315 00	595 11	363 23	1,498 36	399 75	3,171 45
Camduff court-house.....		459 11	107 75	2 40		569 26
Crail immigrant building.....			25 00			25 00
Davidson immigrant building.....	191 15		58 45			249 60
Duck Lake immigrant building.....			3 00			3 00
Edmonton court-house.....	630 00	610 20	58 50	96 04		1,394 74
" Dom. lands and reg. office.....	30 00	458 26	180 00	174 58		842 84
" immigrant shed.....	606 50		285 65	18 05		910 20
" post office, &c.....				56 30		56 30
Indian Head experimental farm.....			205 98			205 98
Innisfail immigrant building.....	100 00					100 00
Lacombe immigrant building.....	130 00		27 50			157 50
Leduc immigrant building.....	80 00					80 00
Lethbridge court-house and custom- house.....	35 00	3 70	65 00	53 05	2 85	159 60
Lethbridge immigration building.....			48 75	286 38	40 00	375 13
" lands office.....				3 48		3 48
" post office.....		510 15		2 00	30 00	542 15
Medicine Hat court-house.....		495 00		35 76	15 00	545 76
Macleod immigrant building.....	75 00					75 00
" custom-house.....			162 75	121 20		283 95
" court-house.....		611 00	568 05	255 30		1,434 35
Moosejaw court-house.....		404 11	22 35	4 35		430 81
" immigrant building.....			47 80			47 80
Mooseomin court house.....		682 05	336 22	17 69		1,035 96
Prince Albert Dom. lands & reg. office.....		378 08		15 75	4 00	397 83
Prince Albert immigrant shed.....			78 95			78 95
" post office, &c.....		256 00		4 20		260 20
Qu'Appelle immigrant building.....			64 00			64 00
Red Deer Dom. lands office.....	200 00					200 00
" court-house.....		488 02				488 02
Regina clerk of works office.....	200 00	0 50				200 50
" court-house.....		1,104 20	729 57	85 58	35 05	1,954 40
" Dom. lands and registry office.....		759 60	453 50	355 96	37 41	1,606 47
" immigrant building.....			252 50	108 82	7 60	368 92
" post office, &c.....		10 40	317 32	460 22	17 50	805 44

6-7 EDWARD VII., A. 1907

PART II.—STATEMENT B.—EXPENDITURE—*Concluded.*

Name of Building.	Rents.	Salaries of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Rosthern immigrant shed			175 90	4 70		180 60
lands office	210 00					210 00
Strathcona immigrant shed	144 00		120 06			264 06
Saskatoon immigrant building			684 00			684 00
South Qu'Appelle immigrant building			8 00			8 00
Wolsley court-house		504 95	279 50	9 25		793 70
Yorkton Dom. Lands office	484 30		53 40			537 70
" immigrant building			384 23			384 23
" court-house		463 86	314 51	5 50		783 87
Total for N.W.T., (carried to Statement A, page 12).....	4,808 95	9,407 21	7,134 73	4,034 55	1,047 64	26,433 08
<i>British Columbia.</i>						
Atlin post office		137 50		8 58		146 08
Agassiz experimental farm		2 00	146 22	38 50		186 72
Colwood telephone repairs	30 00	1 75				31 75
Kamloops post office		697 59	472 50	405 47	36 00	1,611 59
Nanaimo post office		557 45	130 00	353 00	86 00	1,076 45
Nelson post office, &c.		603 14	4 90	880 90	72 00	1,560 94
New Westminster post office, &c.		624 30	517 15	572 80	34 16	1,748 41
Roseland post office, &c.		606 99	488 63	741 75	93 52	1,930 89
Vancouver examining warehouse	3,600 00		4 88	123 53		3,728 41
" post office	440 00	1,809 85	533 89	1,665 39	52 68	4,501 81
" custom-house			44 40	455 33		499 73
Victoria custom exam. warehouse		4 00	14 00			18 00
" clerk of works office	84 00					84 00
" immigration office			6 75			6 75
" marine and indian office (old custom-house)		555 50	227 00	66 84	15 00	864 34
" post office		2,984 45	1,059 85	1,226 71	44 15	5,315 16
" old post office				1 95	82 10	84 05
William's Head quarantine station	30 00		3,439 19			3,469 19
Total for B.C., (carried to State- ment A, page 12).....	4,184 00	8,584 52	7,089 36	6,540 75	465 61	26,864 24
<i>Yukon Territory.</i>						
Dawson, sundry buildings (not appor- tioned)						76,918 88
Whitehorse post office, &c.		1,375 00				1,375 00
Totals for Yukon Ter. (carried to Statement A, page 13).....		1,375 00				78,293 88

PART II.—STATEMENT C.—Showing amounts loaned by Government under the authority of special Acts of Parliament and upon the recommendation of the Hon. the Minister of Public Works, during the Fiscal Year 1905-06.

No transactions of this nature during the fiscal year.

A. G. KINGSTON,
Accountant.

PART III

REPORT

ON

PUBLIC BUILDINGS THROUGHOUT THE DOMINION

FOR THE FISCAL YEAR ENDED JUNE 30. 1906

BY THE

CHIEF ARCHITECT

PUBLIC WORKS, CANADA,
CHIEF ARCHITECT'S OFFICE,

OTTAWA, December 1, 1906.

F. GÉLINAS, Esq.,

Department of Public Works.

SIR,—I am sending you herewith, annual report of works executed under this branch during the year ended June 30, 1906.

D. EWART,

Chief Architect.

PROVINCE OF NOVA SCOTIA.

ANTIGONISH.

PUBLIC BUILDING.

This building, which was described in my report of last year, is still in progress. Plans are prepared for a hot-water heating plant, electric wiring and post office fittings. Plans, &c., prepared by this department.
Clerk of works, Alexander MacGillivray.
Contractors, the Rhodes-Curry Company.

CANSO.

PUBLIC BUILDING.

A contract for the construction of this building was entered into on September 13, 1905. The site has a frontage of 75 feet on Main street by a depth of 100 feet. The building is to be 50 feet by 33 feet, two and a half stories of brick with stone dressings and on a stone basement, and has an engaged angle tower 12 feet square and four stories in height above basement. The basement is for heating, fuel and storage, the ground floor for post office, examining warehouse and lavatory, the first floor for the customs offices and the attic for the caretaker's apartments. The partitions, stairways and floors are of wood excepting in basement where the partition is brick and the floor concrete.

Plans, &c., Prepared by this department.
Clerk of works, Chas. K. Jarvis.
Contractor, James Reid.

HALIFAX.

CATTLE QUARANTINE.

On December 21, 1905, a contract was entered into for the construction of a wooden one story barn, measuring 44 feet by 28 feet, resting on stone foundation walls and

6-7 EDWARD VII., A. 1907

piers, and having a concrete floor. There is a wooden adjunct midway of one side, 10 feet square on plan. This building was completed during fiscal year.

Plans and specification prepared by this department and work supervised by C. E. W. Dodwell, resident engineer and superintendent of public buildings, Nova Scotia, Halifax, N.S.

Contractors, Freeman Bros.

CUSTOM HOUSE.

This building which was described in a previous report has been carried on continuously during the fiscal year and is still in progress.

Drawings were prepared for a heating apparatus and the contract for same awarded to Longard Brothers of Halifax who have nearly completed their work.

The electric wiring, J. E. Dunn, contractor, is nearly completed.

The office fittings and granolithic foot-path on streets are now in progress.

DETENTION HOSPITAL—TRACHOMA HOSPITAL.

Situated in the suburbs of Halifax on the west side of Gottingen street, on a part of the property known as 'The Jail property,' having a frontage of 130 feet by a mean depth of 401 feet, and a breadth in the rear of 165 feet. A contract for the erection of the building was signed on October 23, 1905, and the work is now in progress.

It is a two-story brick building on a stone basement 115 feet long by 51 feet broad, exclusive of verandas 10 feet in width, one extending the full length of front and another extending the full breadth at one end, both of which are two-story. An extension of or projection from the front veranda, measuring 19 feet by 10 feet, contains a stairway to basement. Below the entire area of the front veranda, including the projection, is a basement inclosed by a stone wall on which the veranda rests. The basement floor contains dining room, kitchen, laundry, fuel and furnace rooms, stores, &c., the ground floor contains wards, operating room, public rooms, living apartments, bath-rooms and lavatory-rooms, and on the first floor are wards, living apartments, bath-rooms and lavatory-rooms. The materials throughout are mainly non-combustible.

Plans, &c., prepared by this department.

Clerk of works, A. G. Gates.

Contractor, Samuel A. Marshall & Son.

DOMINION BUILDING.

Additional repairs and repointing of the external masonry were effected, also further repairs to copper roof covering. Repairs were also effected to plumbing, heating, lighting, carpentry, joinery, painting and glazing, and new mail trucks and furniture were supplied.

Work supervised by C. E. W. Dodwell, resident engineer and inspector of public buildings, Halifax, N.S.

IMMIGRATION BUILDING.

The works referred to in my report of last year are complete; a new gas main from street has been laid, the electric wiring was extended, and new furniture and fittings, including beds, supplied.

Plans prepared by this department and work carried out under the supervision of C. E. W. Dodwell, resident engineer and inspector of public buildings, Halifax, N.S.

LAWLORS ISLAND QUARANTINE STATION—WINTER HOSPITAL.

On February 14, 1906, a contract was entered into for the construction of this building which is two and a half stories on a stone basement wall, and consists of a

SESSIONAL PAPER No. 19

main portion 78 feet by 32 feet, with a 28 by 22 feet extension in the rear. The median 36 feet of the main portion and all of the extension are to have an excavated basement, but the remainder is to be unexcavated. The basement is for the heating furnaces, fuel and stores; the ground floor contains two wards at the extremities of the main portion, a public room, two nurses's rooms, two kitchens and two toilet and bath-rooms; on the first floor are to be corresponding wards and bath-rooms, together with 6 additional rooms, while in the attic are to be 4 rooms.

Plans and specification prepared by this department and work supervised by C. E. W. Dodwell, resident engineer and superintendent of public buildings, Nova Scotia, Halifax, N.S.

Clerk of works, Thomas Osborne.

Contractors, Rhodes, Curry & Co.

PICTOU.

CUSTOM HOUSE.

The slating of the main roof and tower was repaired, the entire exterior of the building as well as the greater part of the interior repainted and the hardwood varnished; ceilings whitened; plaster repaired, door spring, new locks and additional heating surface supplied, as well as the glazing and woodwork repaired.

POST OFFICE.

A new concrete foot-path is being laid around the building.

SYDNEY MINES.

PUBLIC BUILDING.

This building, which was described in my report of last year, has been completed and fitted up with a hot-water heating apparatus.

Plans, &c., prepared by this department.

Clerk of works, James Francis.

Contractor for construction, James Reid.

Contractor for heating, The A. C. Thompson Co.

PROVINCE OF NEW BRUNSWICK.

CAMPBELLTON.

POST OFFICE, &c., BUILDING.

This building, which was described in my report of last year, has been completed, fitted up with a heating apparatus, wired for electric light and fitted up with all office fittings and furniture.

Plans, &c., prepared by this department.

Clerk of works, John Mackenzie.

Contractors, J. and D. A. Harquail.

6-7 EDWARD VII., A. 1907

DALHOUSIE.

PUBLIC BUILDING.

This building was put in thorough repair. The plumbing was in large part renovated; a drain pipe was laid from the building to bay water; the first floor was laid with birch; new copper eaves conductors were put up; the window frames and sashes were painted and the hardwood varnished; the masonry, roof and chimney were repaired, the walls and chimneys pointed and the ceilings and walls whitened and tinted.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

FREDERICTON.

DRILL HALL.

On December 7, 1904, a contract was entered into for the construction of a three-story and basement addition to the drill hall, measuring 78 feet front by 23 feet deep, extending across and overlapping one end of the original building. The walls are of brick on a stone basement, the partitions, floors and flat roof being of wood, excepting the basement floor which is of concrete. The roof covering is of tar and gravel. The basement contains the heating furnace, fuel and stores; the ground floor is divided into stores department, D.O.C. room, C.O. room, O.C. room, orderly room, entrance hall, two stairway halls and a W.C. room; the first has a large recreation room which extends up through the second floor, four rooms, a stairway, a W.C. room and a passage, while the second floor, in addition to the upper part of the recreation room, contains the caretaker's apartments. Heating is by a hot-water system.

Plans and specifications prepared by this department.

Clerk of works, H. M. Clarke.

Contractor, C. J. B. Simmons.

NEWCASTLE.

PUBLIC BUILDING.

New drains were put in, connecting the plumbing with the town sewer. Four new water closets were fitted up, the iron covering of deck roof was repaired and painted, ventilators were placed on outlets of vent pipes, the masonry was repointed, a number of blinds were supplied, kalsomining and painting were done and the building thoroughly repaired.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

RICHIBUCTO.

PUBLIC BUILDING.

The grounds were levelled and improved, walks made and trees planted. A hot-air pumping engine for the water service was fitted up in basement. The closet tanks were relined, the water pipes in basement were fitted and some plumbing and other repairs effected.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

SESSIONAL PAPER No. 19

ST. JOHN.

CATTLE QUARANTINE.

On January 15, 1906, a contract was entered into for the construction of two wooden, one-story barns, similar in all respects. Each barn measures 44 feet by 28 feet, has a concrete floor and rests on stone foundation walls and piers. There is a wooden adjunct midway of one side, 10 feet square on plan.

These buildings were completed before the close of the fiscal year.

Plans and specification prepared by this department, and work supervised by D. H. Waterbury, superintendent of public buildings, New Brunswick, St. John, N.B. Contractor, James E. Kane.

CUSTOM HOUSE.

A clock room for the meteorological service was built in basement, with concrete foundations, piers, brick walls and air space partitions, wiring and electrical apparatus, gas fittings and steam fittings. The signal mast and yards were renovated; the unfinished stonework at main entrance was carved and repairs were made to concrete floor of furnace-room, tiling of main hall, customs elevator, woodwork, painting, plumbing, bells, clocks, hose, furniture, copper covering of roof, glazing, &c.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

IMMIGRATION BUILDING AND NO. 4 SHED.

These consist of the immigration building, the property of the department and also the immigration quarters in No. 4, city warehouse under rental to this department.

In the former a rearrangement of the ground floor partitions was made with a view to increase the baggage accommodation; a flight of steps and inclosure to first floor hospital were built; the heating pipes were rearranged and added to; a new top was placed on smoke stack; new hospital beds were supplied and the existing beds rearranged; a coal bin was built and the sewer was extended 80 feet to low water mark. Repairs were made to roof, concrete floors, plumbing, heating, kitchen ranges, glazing, furniture, chimney and woodwork; the interior of the building was painted and kalsomined, and some fittings and utensils supplied for fireman.

Improvements were made to the heating system of No. 4 shed, strong roller hangers were put up and the pipes covered with felt and duck.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

PARTRIDGE ISLAND QUARANTINE STATION.

The buildings hereat comprise a disinfection house, four detention buildings, two hospitals, a gas-house and plant, a quarantine steward's house and a medical superintendent's residence. Of these the new hospital and two detention buildings described in my report last year are recently completed and have installed heating apparatus, beds, cooking ranges, plumbing, &c.

A new 13 horse-power steam boiler was supplied and fitted up in the disinfection house.

The exterior of the medical superintendent's house was painted and some repairs made to the plaster ceilings of the steward's house, while minor repairs were made to the various buildings.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

WATER WORKS.

In order to furnish Partridge island with a water supply, an agreement was made with the corporation of St. John, whereby it extended the pipe line, in 1904, from St. John street to H. W. mark below Fort Dufferin. The work was completed in November of that year.

6-7 EDWARD V., A. 1907

POST OFFICE.

A new smoke-stack was supplied for furnace. The W.C.'s in basement were removed and replaced by new closets of a recent sanitary pattern. Some of the attic plastering was renovated; three postal trucks were supplied for railway mail service; some articles of furniture were supplied; the postal parcels' offices were painted, the ceilings whitened and the stairway varnished; some new blinds were supplied the post office; the general delivery and first floor offices were painted; the lobby woodwork varnished and the ceiling kalsomined; the hoist was overhauled and partly renovated and minor repairs were made to heating, lighting, bells, plumbing, woodwork, glazing, plaster and furnace.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

ST. JOHN WEST (CARLETON).

POST OFFICE.

A portion of the roof of rear portion was recovered with galvanized iron. A clock and a standing desk were supplied. Repairs were made to flag staff, halyards, woodwork generally, cupola shutters, stove, &c., and some of the woodwork was painted.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

ST. JOHN.

SAVINGS BANK.

Thorough repairs were made to general offices, heating apparatus, &c., the interior walls, vaults and closets were painted or papered, the hardwood cleaned and varnished and the ceilings whitened.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

ST. STEPHEN.

PUBLIC BUILDING.

A new birch floor was laid; the exterior walls were pointed; the woodwork was painted or varnished; some kalsomining was done; linoleum was supplied the post-master's office; some repairs and renovation were made to plumbing and heating and the woodwork and glazing repaired.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

TRACADIE.

LAZARETTO.

The large water cistern was relined with copper and the plumbing improved.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

WOODSTOCK.

ARMOURIES.

This building, which was described in my report of last year, has been completed and fitted up with a hot-water heating apparatus.

Plans, &c., prepared by this department.

Clerk of works, James E. Drysdale.

Contractor, Williamson Fisher.

SESSIONAL PAPER No. 19

PROVINCE OF PRINCE EDWARD ISLAND.

SOURIS.

PUBLIC BUILDING.

On January 26, 1905, a site for this building was acquired by purchase, having a frontage of 63 feet on Main street by 100 feet in depth; plans and specifications were prepared and a contract for the construction entered into on August 1, 1905. The building consists of a main portion 38 feet by 30 feet; having basement, ground floor, first floor and attic, and in the rear a one-story and basement adjunct 38 feet by 13 feet. The basement is for heating furnace, fuel and storage; the ground floor contains the post office, stairway hall, examining warehouse, mail entrance and store-room; the first floor is for customs offices and the attic caretaker's apartments. The external walls are brick on a stone basement, the partitions, stairs, floors and roof, excepting the basement floor, which is concrete, are of wood. The roof is covered with wooden shingles on slopes, but with tar and gravel on the decks, the flashings, covering of copings and other metal coverings being of copper.

The heating is by hot water.

Plans, &c., prepared by this department.

Clerk of works, Bernard Creamer.

Contractor for construction, Edward H. Mitchell.

Contractor for heating apparatus, Bruce Stewart.

PROVINCE OF QUEBEC.

BERSIMIS.

TELEGRAPH OFFICE.

A one-story and mansard attic wooden building on a stone basement, 31 feet by 26 feet, exclusive of a one-story porch 7 feet by 8 feet at side, and a one-story shed 11 feet by 16 feet in the rear. The ground floor contains vestibule, a stairway hall and 3 rooms, and the first floor a passage and 4 rooms. The chimney is of brick.

Plans and specification prepared by this department.

Contractors, Tremblay, Cole and Boivin.

BERTHIERVILLE.

PUBLIC BUILDING.

Electric lighting was installed; the brick wall between the post office and the annex was removed, and the walls and woodwork of the office and lobby were painted. The gallery in front was refloored.

Work supervised by G. S. Gingras, of this department, Montreal, P.Q.

CHICOUTIMI.

PUBLIC BUILDING.

On August 7, 1905, a contract was entered into for the construction of this building on a site fronting on Racine street (cad. No. 14). The building is of stone, 58 feet by 44, exclusive of an engaged tower 15 feet square, which projects 6 feet from the

6-7 EDWARD VII., A. 1907

middle of the front. The building is $2\frac{1}{2}$ stories and basement, excepting the tower, which is $3\frac{1}{2}$ stories. The basement partitions, the lining of basement and the principal partitions of ground floor and first floor as well as the chimneys are of brick; the floor of basement is concrete, but the remaining floors, partitions, stairs and roof are of wood. The sloping roofs and tower roofs are covered with metal, and the deck with tar and gravel. The basement contains the furnace and fuel rooms, the customs examining warehouse and the stairway hall; of the ground floor 36 feet of the frontage by the depth is for the post office and the remainder divided into telegraph office, collector of customs office, stairway and W.C.'s; the space on first floor over the post office is occupied by the Public Works Engineer, and the remainder contains one office for the inland revenue, a spare office, the stairway and a lavatory-room, while the attic contains the caretaker's apartments.

Plans and specification prepared by this department.

Clerk of works, Wm. Warren.

Contractor, Adolphe Beaulieu.

COATICOOK.

PUBLIC BUILDING.

The interior was cleaned and painted, the ceiling of the post office was tinted, and the gutter in roof cornice was repaired.

All supervised by G. S. Gingras, of this department, Montreal, P.Q.

DRUMMONDVILLE.

PUBLIC BUILDING.

Some minor repairs were made to roof, masonry, brickwork and painting, under the supervision of G. S. Gingras, of this department, Montreal, P.Q.

FARNHAM.

POST OFFICE.

Repairs were made to plaster walls and ceilings of office and basement as well as to furniture, glazing, &c., which were damaged by the blowing open of the safe by burglars.

Work supervised by G. S. Gingras, of this department, Montreal, P.Q.

GRANBY.

PUBLIC BUILDINGS.

The roof was repaired and made watertight; copper drips were fixed under all stone courses and sills; the masonry and brickwork were cleaned and repointed; a wind guard tile was placed on main chimney, the entrance doors were revarnished, the walls and ceilings of the post office and lobbies were kalsomined and finished with picture moulding.

A striking clock was installed in the clock tower.

Work supervised by G. S. Gingras, of this department, Montreal, P.Q.

SESSIONAL PAPER No. 19

JOLIETTE.

PUBLIC BUILDING.

A new hot-water furnace was substituted for the original furnace which was worn out, and three new water closet basins with connections, &c., were substituted for the original closets which were considered unsanitary; the original footpath along the frontage was taken up and replaced by one in granolithic. The plastering was repaired and all the interior painted; the fittings and furniture were cleaned and revarnished; a brass grille was supplied to delivery wicket; some door checks were supplied and the two entrance gates were renovated.

All done under the supervision of G. S. Gingras, of this department, Montreal, P.Q.

L'ASSOMPTION.

PUBLIC BUILDING.

Electric lighting was installed and a metallic ceiling put up in the post office and public lobby under the supervision of G. S. Gingras, of this department, Montreal, P.Q.

LACHINE

POST OFFICE.

The galvanized iron roof, cornices, flag-pole, gutters and conductor pipes were repainted and the lower part of main stone walls repointed. In the caretaker's quarters a new hardwood floor was laid in kitchen and the walls and ceilings throughout were repaired and kalsomined.

Work supervised by G. S. Gingras, of this department, Montreal, P.Q.

LEVIS.

PUBLIC BUILDING.

This building which was described in my report of last year has been continuously in progress but is not yet completed. Owing to the site being made-ground, consisting in part of the decayed remains of old piers and docks, it was found necessary to take the foundation down to the rock.

Plans for a hot-water heating system have been prepared.

Clerk of works, L. Auger.

Contractor, Joseph Couture.

LONGUEUIL.

POST OFFICE.

This building which was described in my report of last year is nearly completed and is being wired for electric lighting, fitted up with hot-water heating and furnished with a striking tower clock.

Plans, &c., prepared by this department.

Clerk of works, Alfred Préfontaine, architect.

Contractor, Joseph Bourque.

Contractor for clock, T. A. Grothé.

Sodding, W. Baker.

6-7 EDWARD VII., A. 1907

MONTMAGNY.

PUBLIC BUILDING.

This building, for which a contract was entered into March 17, 1906, is in course of erection on a site bounded by St. Jean Baptiste, Ste. Marie and St. Thomas streets, with frontages thereon of 46 feet, 60 feet and 54 feet respectively. The building is two and a half stories, of brick with stone dressings, on a stone basement, and measures 38 feet by 29 feet. The basement floor is for heating furnaces, fuel and stores; the ground floor for the post office, stairway hall, W.C. and lobby; the first floor for the customs offices, bath-room and stairway hall, while the third floor is the caretaker's living apartments.

Plans and specification prepared by this department.

Clerk of works, Theodore T. Beaumont.

Contractor, Napoléon Dumont.

MONTREAL.

CUSTOM HOUSE.

Repairs were effected to parcel postal system. An electric light system was installed. Furniture was supplied to various rooms, also carpets, linoleums, &c. A few rooms were painted.

Work supervised by C. Desjardins, clerk of works, Montreal.

CUSTOMS—CANAL.

Galleries, stairs, &c., were repaired. The building was painted inside and out, the electric lighting was improved and two new lights were added.

Work supervised by C. Desjardins, clerk of works, Montreal.

EXAMINING WAREHOUSE.

The cornice joints were recovered with lead. The water service pipes were repaired. A board partition was put up in department of unclaimed goods. The heating system was improved. Shelving and tables were installed in all the different departments in basement.

A stone addition was erected to the annex on west side for passenger elevator and the elevator installed, including concrete foundation, &c. Glazed partition was erected. Iron braces were put on affected portions. Walls were repaired and crevices filled in. A new flag staff put up. Locks for iron doors of different departments were put on. Two new tubular boilers were installed, with two underfeed stokers, complete with engine and fan in examining warehouse.

Work supervised by C. Desjardins, clerk of works, Montreal.

IMMIGRATION HOSPITAL.

Additions were made to counters; cupboards and tables were built. Walls and cornices were repaired. Part of the building was whitewashed and painted.

Work supervised by C. Desjardins, clerk of works, Montreal.

POST OFFICE.

The stone stairs on east side entrance were repaired. Tile floor and vestibule to entrances were repaired. On east side, where windows are more exposed, iron grilles were put on for protection against burglars. The roof has undergone various repairs. Improvements were effected to electric light system, new lights were added, various repairs were done to water service pipes. Lavatories, taps, &c., were renewed; W.C.'s

SESSIONAL PAPER No. 19

MONTREAL—*Con.*

have undergone several repairs and bowls were renewed. A few cisterns, plugs, &c., were renewed. New pigeon-holes were made and other furniture added. Letter and newspaper boxes were repainted.

Work supervised by C. Desjardins, clerk of works, Montreal.

POSTAL STATION 'B.'

A contract was entered into for the construction of this building, January 5, 1906. It is situated on St. Catharine street, and is a brick building faced with cut stone, and resting on a stone basement. It has a frontage of 51 feet by a depth of 90 feet; 40 feet of the depth being three stories and basement, and the remainder one story and basement. The basement is for heating furnaces, fuel and storage; the ground floor is the post office; the first floor contains 5 offices, a W.C. room and a stairway, while the second floor contains living apartments. The floors, partitions and roof are mainly iron, terra cotta and concrete.

Plans and specification prepared and work supervised by Maurice Perrault, architect, Montreal, P.Q.

Clerk of works, Thomas Parent.

Contractor, Jos. Bourque.

STE. CUNÉGONDE.

This is a rented building. Previous to the annexation of the municipality the building was used as a town hall.

Fittings were renewed, such as pigeonholes, tables, letter boxes, brass plates, &c.

Work supervised by C. Desjardins, clerk of works, Montreal.

ST. LOUIS DU MILE END.

The roof covering was repaired and caps put on the two chimneys.

The stone cornice of portico was recovered with copper. Gas light was repaired and more lights added.

Work supervised by C. Desjardins, clerk of works, Montreal.

NICOLET.

PUBLIC BUILDING.

On June 26, 1906, a contract was entered into for the construction of this building on a plot of ground situated at the S.W. corner of the intersection of Hotel Dieu Hospital avenue and Brasseur street, with frontage thereon of 50 feet and 130 feet, respectively.

The building is to be of two stories, of brick with stone dressings, and on a stone foundation; to consist of a main portion, 49 feet by 30 feet, with an adjunct of 32 feet 6 inches by 20 feet 6 inches, to accommodate, in the basement, the furnaces and fuel; on the ground floor the post office in the main portion and the examining warehouse and weights and measures in the adjunct. The first floor of the main building is designed for the customs and inland revenue offices, and that of the adjunct for use as an armoury. There is to be a brick vault on both ground and first floors. The floors, stairs, partitions and roof, excepting the basement of the adjunct and the stairway hall, which is concrete, are to be of wood; the roof covering is to be of tar and gravel composition, and the roof cornices and copings of galvanized iron.

Plans, specification, &c., prepared by this department.

Clerk of works, Philémon Rivard.

Contractor, Joseph Bourque.

6-7 EDWARD VII., A. 1907

QUEBEC.

CUSTOM HOUSE.

Several offices were repaired, papered and painted and a number of pieces of furniture was supplied.

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

EXAMINING WAREHOUSE.

Repairs were made to roof.

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

HIS EXCELLENCY'S RESIDENCE, CITADEL.

Alterations of and additions to heating apparatus and to water service were effected and two new arc lights were installed. Repairs were effected to plumbing, bells and lighting; some of the furniture was repaired and revarnished, and the interior of the building cleaned and put in order for the annual visit of their Excellencies.

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

IMMIGRATION BUILDING, LOUISE EMBANKMENT.

The electric light plant was entirely renovated, the building was repainted inside and out, the roofs were repaired, the yard was paved with plank, a hot-air pump was fitted and connected with the water service, fire appliances were supplied, benches were placed about the exterior of the building, a fuel shed was constructed and the gates repaired.

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

POST OFFICE.

The safety vault was reconstructed and had a new steel door supplied; a new partition and some counters and hardwood floors were fitted up and laid; alterations and additions to heating apparatus and water service and lighting were effected and there were supplied window blinds, carpets and furniture. Repairs were made to plastering and minor repairs in the other trades.

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

TRACHOMA HOSPITAL—SAVARD PARK.

A brick building for disinfection was erected, the cesspool was lined with brick; the verandas of the temporary hospital were covered with iron; the temporary hospital windows were furnished with iron grilles; two ranges were furnished and heating apparatus, baths, electric light; &c., were put in the temporary building and also temporary latrines erected outside.

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

DETENTION HOSPITAL—TRACHOMA HOSPITAL.

A contract for the erection of the building was signed on October 28, 1905, and the work is still in progress.

It is a two-story brick building on a stone basement 115 feet long by 51 feet broad exclusive of verandas, 10 feet in width, one extending the full length of front and another extending the full breadth at one end, both of which are two story. An extension of or projection from the front veranda, measuring 19 feet by 10 feet, contains a stairway to basement. Below the entire area of the front veranda, including the projection, is a basement inclosed by a stone wall on which the veranda rests.

SESSIONAL PAPER No. 19

QUEBEC—*Con.*

The basement floor contains dining-room, kitchen, laundry, fuel and furnace room, stores, &c.; the ground floor contains wards, operating room, public rooms, living apartments, bath rooms and lavatory rooms, and on the first floor are wards, living apartments, bath room and lavatory rooms. The materials throughout are mainly non-combustible.

Plans, &c., prepared by this department.

Work done under the supervision of E. M. Talbot, architect.

Contractors, Jinchereau & Lamonde.

WEIGHTS AND MEASURES OFFICES.

An electric lighting system was installed under the supervision of Ph. Béland, of this department, Quebec, P.Q.

ST. HYACINTHE.

DRILL HALL.

This building, which was described in my report of last year, is in course of construction, and is expected to be completed shortly. Plans for a hot-water heating apparatus are prepared.

Plans, &c., prepared by this department.

Clerk of works, Francis Renaud.

Contractors, Paquet & Godbout.

INLAND REVENUE BUILDING.

The brick walls of the upper basement were plastered and finished to accord with the remaining portions of the building and the gas and water systems were extended. Work supervised by G. S. Gingras, of this department, Montreal, P.Q.

ST. JOHNS.

POST OFFICE BUILDING.

A contract for the construction of this building was entered into on February 6, 1906. It is to have a frontage of 63 feet on Jacques Cartier street, by a depth of 44 feet, and is to be erected on the west part of cadastral number 153, which has a frontage of 78 feet by a depth of 63 feet. The building will be of two stories, a basement and a mansard attic and, in addition, the two angles of the front are to be carried up as towers, each 15 feet square, one to be three stories and basement and the other three stories, basement and clock spire. The basement is to contain the heating furnaces, fuel, stores and stairway; the ground floor, the post office, brick vault, lavatory-room, mail entrance and stairway; the first floor living apartments, while the attic story is to be unfinished. The external walls and the basement piers are to be stone; the partitions of ground floor and basement, as also the chimney are to be brick, while the remaining partitions, the roofs, stairs and floors, excepting the basement floor, which is of concrete, are to be of wood; the roof covering to be slate on slopes and tar and gravel composition on the deck.

6-7 EDWARD VII., A. 1907

Plans and specification prepared and work to be supervised by J. E. A. Benoit, architect, St. Johns, P.Q.
Contractor, J. J. Collins.

ST. JEROME.

PUBLIC BUILDING.

The original wooden foot-path along the frontage of the property was taken up and replaced by one of granolithic. The original hot-water heating furnace was taken out and replaced by a new cast-iron furnace. The upper course of the brickwork of external walls, which had shown signs of failure, were in part rebuilt, as also the two chimney shafts and the coping stones of brick wall on main front were replaced and same repaired and cramped together. An iron drop letter box was affixed to brick wall near main entrance; the plastering in customs and inland revenue offices and in the caretaker's quarters, was repaired and kalsomined; a bath-room was partitioned off and a bath and water closet fitted up in caretaker's apartments, where a hardwood floor was laid and a chair rest placed around the walls of the kitchen.

Work supervised by G. S. Gingras, of this department, Montreal, P.Q.

SOREL.

PUBLIC BUILDING.

The interior was extensively repaired; the walls and ceilings, excepting those of the caretaker's quarters were repaired and painted three coats thereon; all joinery and pine floors throughout were painted and all hardwood fittings and floors cleaned, oiled and varnished. The floors of the main and entrance lobbies as well as of the registered letter and money order offices were tiled. A number of the windows had to be refitted, the heating and lighting underwent minor repairs and in the caretaker's quarters the walls and ceilings were papered.

Work supervised by G. S. Gingras, of this department, Montreal, P.Q.

TERREBONNE.

POST OFFICE.

This building which was described in my report of last year has been completed, fitted up with a hot water apparatus, electric lighting, &c. A granolithic foot-path was laid down along the street frontage and the lot graded and sodded.

THREE RIVERS.

DRILL SHED.

This building which was described in my report of last year is still in course of construction. Plans, &c., for a hot water heating apparatus are prepared.

Clerk of works, Emile Tanguay, architect.

Contractors for the erection of the building, Jos. Bourque & Co.

Contractors for heating apparatus, Martel & Langelier.

SESSIONAL PAPER No. 19

PROVINCE OF ONTARIO.

BRIDGE BURG.

POST OFFICE.

This building which was described in my report of last year has been completed, fitted up with hot water heating, electric lighting, office fittings and furniture, &c.

BURFORD.

ARMOURY.

This building which was described in my report of last year has been completed.

CHATHAM.

DRILL HALL.

This building which was described in my report of last year is still under construction. A hot water heating apparatus is being fitted up.

GALT.

ALTERATION OF THE EXAMINING WAREHOUSE.

The walls and floor of the adjunct, originally designed for use as an examining warehouse, were raised; a new roof was put on and a new entrance porch with concrete steps was built, all to increase the post office area and add to the public lobby, money order office and postmaster's office. Additions were made to the plumbing and heating.

Contractor, Archibald Macausland.

GUELPH.

ARMOURY.

A contract was entered into on June 1, 1906, for the construction of this building which is designed to be erected on the corner of Haskisson and Farquhar streets, of brick with stone dressings and on a stone foundation, a portion of which is to be excavated to form a basement. That portion fronting on Haskisson street is to be 146 feet long by a depth of 36 feet, exclusive of projections; the median 50 feet of the length, together with a stairway 25 feet by 20 feet in rear, is to be three stories and basement in height as also are to be two circular towers, 15 feet in diameter, at either end in rear; the remainder of the Haskisson street frontage to be two stories and basement. In the rear is to be an extension 88 feet in breadth by 192 feet in depth, all of one story, without basement, excepting 17 feet of the depth, next the main building, the median portion of which is to be three stories and basement, the remainder two stories and basement.

The basement is for shooting alleys, bowling alleys, furnace room, fuel room, lavatories and staircase. The three-story portion is to contain, on the ground floor, the main entrance flanked by two infantry armouries; the first floor, a lecture room, a closet, a lavatory and a stairway, and the attic living apartments; in the two-story portion on the ground floor are to be mobilization stores, field battery stores and A.S.C.

6-7 EDWARD VII., A. 1907

stores, and on the first floor, officers' and sergeants' mess, three C. O. rooms, a band-room and two stairways.

Plans, &c., prepared by this department.

Clerk of works, W. A. Mahoney.

Contractors, Nagle and Mills.

HAWKESBURY.

POST OFFICE.

This building, which was described in my report of last year, is constructed, fitted with a hot-water heating apparatus, electric lighting and office fittings and furniture, complete for occupation.

KINGSTON.

CUSTOM-HOUSE.

The galvanized roof covering was painted and new halyards were supplied for flag pole. The corporation of the city had the fence, between the park and the plot of ground leased them, taken down and replaced in good condition on the line dividing customs grounds from park.

All under the supervision of Arthur Ellis, architect, Kingston, Ont.

POST OFFICE.

The stone building at the rear, originally used for storage, has been converted into a permanent residence for caretaker and is now occupied as such; having three rooms and entrance hall on ground floor and three bedrooms and a bath room on first floor. There are electric lighting and water service.

A new water closet and a new urinal were fitted up in basement; the galvanized roofing was coated with roofing cement; a plank walk was laid to caretaker's residence; the water service was enlarged and the flag pole was taken down, repaired and replaced.

All done under the supervision of Arthur Ellis, architect, Kingston, Ont.

STABLE FOR BATTERY 'B' R. C. ARTILLERY.

This building, which was described in my report of last year, is completed.

Plans and specifications prepared by this department.

Resident architect and clerk of works, Arthur Ellis.

Contractor, David Booth.

STABLES FOR ROYAL MILITARY COLLEGE.

This building which was described in my report of last year is completed.

Plans and specification prepared by this department.

Resident architect and clerk of works, Arthur Ellis.

Contractor, H. W. Watts.

LONDON.

MILITARY STORE BUILDING.

This building, for which a contract was entered into on August 8, 1905, is two and a half stories of brick with stone dressings and on a stone basement. It consists of a main portion 65 feet by 48 feet for stores and an adjunct 34 feet by 24 feet for a care-

SESSIONAL PAPER No. 19

taker's residence. The basement of the main portion is for furnace, fuel, stores and W.C.'s; the ground floor for armoury, hospital stores, shipping room, office, hall and elevator, while the first and second floors have storerooms only. The adjunct is entirely devoted to living room and has a veranda on the ground floor front and a covered platform at the rear.

Plans, &c., prepared by this department.

Clerk of works, Wm. Joanes, architect.

Contractor, R. G. Wilson.

POST OFFICE ALTERATIONS AND ADDITIONS.

A contract for the execution of these works was entered into on April 17, 1905. They comprise an addition to the length of the rear building and an additional story thereon together with minor works of alteration. The addition continues the lines and repeats the design of the original building and makes the rear portion two and a half stories and basement, measuring 57 feet in depth by the full breadth of the main building. In the basement portion there are some new walls, new partitions, vault and piers of brick, and a new W.C., also some new doorways are opened; on the ground floor all the vaults and walls of the rear building but the front and rear wall are taken down and the entire floor space, excepting what is required for a stairway and a mezzanine lavatory, is a part of the large post office room. The first floor of the addition contains storeroom and the caretaker's apartments. In the main building are three new brick vaults, one above another, and some minor changes in openings, &c., were made.

Plans prepared and work supervised by H. C. McBride, architect.

Contractor, Wm. Tytler.

OSHAWA.

POST OFFICE.

This building which was described in my report of last year has been completed, fitted up with hot water heating apparatus, electric wiring, water supply, office fittings, furniture, &c.

Plans, &c., prepared by this department.

Clerk of works, Wm. Holland.

Contractor, W. J. Trick.

OTTAWA.

CENSUS OFFICES, CANADIAN BUILDING, SLATER ST.

This is a rented building.

The census offices were removed here from the Seybold building at the corner of Sparks and O'Connor streets. A large amount of new shelving was put up and a quantity of old shelving taken down and put up. There were supplied: brass rods and curtains, coat hooks on rails, one strong box and two cushions. Repairs were made to four desks and nine chairs and the former were recovered with cloth.

Work done under the supervision of this department.

Superintendent, John Shearer, jr.

CORY BUILDING, RIDEAU STREET AND SAPPER'S BRIDGE.

This is a rented building. Electric bell hanging was done for the waterways commission to which was supplied one table, three trestles and some furniture repairs. For

6-7 EDWARD VII., A. 1907

the Georgian Bay ship canal there were provided twenty-five desk lamps, eight drop lights, five 1-light fixtures, three 3-light and four 2-light with switches, &c. For the Marine and Fisheries there were four 3-light fixtures, two 1-light fixtures, twenty-four desk lamps and forty-seven other lights, complete with shades, switches, &c.

Work done under the supervision of this department.
Superintendent, John Shearer, jr.

CITY POST OFFICE.

The additions and restorations referred to in my report of last year are nearly completed. The work has been retarded by the occupation of the building throughout the progress of the work. Two electric elevators, one a passenger and one a freight, were erected and an additional hot water furnace was fitted up.

Plans and specification prepared and work supervised by this department.
Clerk of works, Samuel Adams.

DOMINION ARCHIVES BUILDING.

This building, which was described in my report of last year, has been continuously under construction and is now nearing completion. A hot water heating apparatus is being fitted up and steel fittings for the Archivist are being prepared.

Plans and specifications prepared by Band, Burritt and Meredith, architects.

Clerk of works, Pat. Canty.
Contractor, W. H. MacGillivray.

BIOLOGICAL LABORATORY.

Repairs and renewals were made to the gas machine.

CANADIAN BUILDING, SLATER STREET.

This is a rented building. Electric bells were hung in three rooms. Two desk lights and four drop lights, four switches and three desk telephones were installed.

Work done under the supervision of this department.
Superintendent, John Shearer, Jr.

DOMINION OBSERVATORY.

An electric bell was hung and some additional electric lights installed.
Work done under the supervision of this department.
Superintendent, John Shearer, jr.

EASTERN BLOCK.

Nineteen rooms were painted, tinted and done over, three for the Justice, three for the Auditor General, five for the Finance, six for the Privy Council, one for the Indian Affairs, and one for the Secretary of State's Department. Twelve hardwood floors were laid, seven for the Auditor General, three for the Privy Council and two for the Justice Department. Twenty-one tables were supplied, eleven for the Auditor General, two for the Indian Affairs, seven to the Finance, and one to the Justice Department. Five window deflectors were supplied, three to the Auditor General, one to the Justice and one to the Indian Affairs Department. Two wash-basins were supplied to the Auditor General's Department and a like number to the Secretary of State department. New window frames and sash were put in—two for the Privy Council, two in the Justice and seven in the Auditor General's Department. Of brass rods and curtains for lavatories, seven were supplied to the Auditor General's Department, three to the Indian Affairs and one to the Privy Council. Fifteen

SESSIONAL PAPER No. 19

cupboards were supplied, two to the Finance, two to the Secretary of State, one to the Indian Affairs and ten to the Auditor General. Three stepladders were supplied to the Auditor General and one to the Department of Finance. Three chests were supplied to the Justice Department, and ten to the Finance. Four screens were supplied to the Indian Affairs, one to the Auditor General and one to the Justice Department. Fifteen desk lamps were supplied, nine to the Auditor General's, one to the Justice, two to the Finance, one to Secretary of State and two to Indian Affairs Department. Three drop lights were supplied to Indian Affairs and two to Auditor General.

The Justice Department was supplied with a six-light electrolier and a three-light cluster, and the Auditor General's and Finance Departments, each, with a portable electric lamp. A cushion each was supplied to the Auditor General's and Secretary of State's departments. Two doors and two partitions were put up in the Finance department, two green cloth doors in the Auditor General's and some shelving in the Justice. Two cases and twenty-five packing boxes were supplied the Justice Department; one desk, one curtain and one radiator to the Auditor General's; one desk to the Indian Affairs; one map rack to the Secretary of State and 22 locks to the Privy Council. Eight signs were lettered for the Auditor General's Department, three for the Justice, and two electric bell annunciators were set up for the Finance Department. Repairs were made to seven pieces of furniture for the Finance Department, four for the Indian Affairs, three for the Auditor General's and five for the Secretary of State, while the articles of furniture revarnished were fourteen for the Indian Affairs Department, eight for the Finance, three for the Secretary of State and five each for the Justice and Auditor General's.

A large number of lights were reglazed.

There were minor jobs, such as lettering, painting, &c., and joinery. The double windows and summer blinds were taken off, stored, cleaned and put on periodically, and the roofs, footpaths and roads kept free from snow during winter.

Work done under the supervision of this department.

Superintendent, John Shearer, jr.

GEOLOGICAL MUSEUM, SUSSEX STREET.

One hallway and seven rooms were papered, tinted and painted. Two thousand feet of shelving was put up, the floors were repaired and there were supplied three cupboards, one tank, three doors and one window frame, two lead-lined sinks with water services, wastes, &c., were put in. One gas radiator was supplied and connected and the following lighting appliances supplied and wired. Eleven drop lights, thirteen desk lights, five two-light fixtures, one arc lamp, two wall brackets, three lamps on gas fixtures, three receptacles, five branch blocks, fifteen switches, one cut-out, also tubes, cleats, wire, moulding, &c.

Work done under the supervision of this department.

Superintendent, Jno. Shearer, jr.

GOVERNMENT GROUNDS.

The electric lighting of the parliament grounds which was begun in the previous year was carried on during the year 1905-6 and is now practically completed. The east wall of the parliament grounds greenhouse was removed and replaced by one of concrete, new flower stands were built, old flower stands were repaired, all the lamp posts were painted and a flight of steps from the driveway thereto built in concrete. A concrete platform for the noon gun was laid.

In the Major's Hill Park, the southwest slopes facing the lake were graded and sodded, a new path was made skirting the southwestern portion of the park and large numbers of trees, shrubs and hardy herbaceous plants were purchased and planted, principally in the new portions of the park, and a new boat was built for use at lake.

Work done under the supervision of this department.

6-7 EDWARD VII., A. 1907

OTTAWA.

GOVERNMENT HOUSE.

A contract was entered into September 7, 1905, for the construction of an addition to the southeastern angle of the main building on the site of the large conservatory which was taken down and removed to afford space. The addition measures 40 feet by 35 feet and has two stories, basement and attic. The basement is the servants' hall; the ground floor, His Excellency's office, and each of the succeeding floors a bedroom. There is a lavatory on each floor, excepting in the basement. The walls are of stone and are similar in detail to those adjoining, while the floors are level with corresponding floors of the main building.

The material of the conservatory removed was used in the construction of a temporary structure for the housing of the palms and other plants taken from the conservatory pending the erection of a new conservatory which is to be proceeded with at an early date. Another green house, which measured 70 feet by 20, was taken down and rebuilt on a different site to accommodate the plants from other plant houses which were about to be torn down to provide space for the new conservatory. The ice-house was enlarged about double its former capacity. The larder was rendered ratproof by the removal of the wooden partitions and floor and the substitution of others composed of concrete, metal lath and cement plaster. The temporary building, erected the previous year on the occasion of the state ball for use as a buffet and lounging room, was re-erected this season for a like purpose. The suite of rooms in the brick wing was fitted up temporarily for the use of the Prince. Of painting and glazing there were 4,585 yards two and three coat painting, 269 yards tinting and varnishing, 75 yards enamelling, 1,291 yards tinting, 104 rolls of papering, 975 feet of glazing, exclusive of 2,600 feet of glass taken off and reglazed in greenhouses moved, and also the painting of 45 pairs blinds as well as the bronzing of 15 radiators and 12 fancy chairs. A large number of pieces of furniture were cleaned and revarnished. Of household furniture there were supplied one billiard table, three safes, fifty-six chairs, eight bedsteads, twelve tables, five chiffoniers, four washstands, seven mattresses, seven screens, one chest, three stools, one lounge, two high boys, one low boy, one table desk, three clocks, one telescope, twelve wood baskets, one billiard lamp, billiard balls, cues, rests, &c., one bed canopy, one bed-spread, eleven pairs curtains, eighteen pillows, four bolsters, four mirror stands, four toilet stands and four box springs. Of carpets, rugs, &c., there were supplied and laid 119 yards carpet, 56 yards of linoleum and corken, 223 yards felt, 1,225 yards of cotton, ten rugs and one bath mat, with all necessary lining, &c. Twenty-two loose covers for chairs and sofas were supplied, a number of curtains were cleaned and dyed, 2,120 yards of carpet and forty rugs were taken up, cleaned and relaid. One hundred pennants and banners were supplied, as well as some textile fabrics for decoration. In addition to the foregoing there were supplied thirty-six satin quilts, forty-eight blankets, thirty-six toilet covers, twelve hearth sheets, 1,215 articles of napery, including kitchen towels, &c., 174 pieces of stoneware, 1,064 pieces of china, 1,816 pieces of glass, and also a large number of kitchen, dairy, still room, housemaids', butlers' and stewards' utensils.

Repairs were made to the heating, electric lighting, bell service and plumbing, and some new coils and radiators put in. Eight hundred lineal feet of sidewalk, 4 feet wide, was laid to replace plank sidewalk, and 1,055 lineal feet of fencing was rebuilt, in greater part, to replace fence blown down by gale.

The conservatories were kept in order, the lawns, drives, &c., rolled and otherwise tended. The ice-house was stored with ice. The roofs, paths, slides, rinks, &c., were cleared of snow by the departmental staff, by whom the grounds, lawns, gardens and plant-houses were maintained.

The usual periodic cleaning, packing and unpacking were done; arrangements for and attendance on entertainments were furnished, and the rinks, slides, &c., kept in order.

SESSIONAL PAPER No. 19

A brick addition was made to the rear of the cottage, 24 feet by 24 feet, containing, in the basement, a kitchen, a scullery, a bath-room, a W.C. and a hall, and on the ground floor a housemaid's pantry and sewing-room. The kitchen was floored with concrete covered with wood and fitted up with a steel range, hot water boiler, gas cooking stove, cupboards, tables, wall hooks, &c. The basement rooms formerly used as kitchen and store-rooms were cleaned, the kitchen and corridor floored with hardwood, the basement cleaned, painted and distempered throughout and the old kitchen converted into a servants' hall. The hot water heating, electric lighting and water supply were extended to the addition. The meat larder was improved, a new brick ash-pit was built, at a greater distance than the original one from the house, a part of the shed was converted into an ice-house and a further part into a box-room. There were furnished one electric fan, twelve chairs, one table, one dresser, two hammocks, one coal stove, three coal scuttles and a number of articles of stoneware, china, glassware and of kitchen utensils. Repairs were made to veranda and glazing. A number of cupboards, wardrobes, tables, stands, &c., were made for the several rooms.

Work done under the supervision of Wm. Hutchison, superintendent.

IMPERIAL BUILDING.

This is a rented building on the south side of Queen street, near O'Connor street. Three additional electric lights and two electric fans were installed and some of the original lights altered.

Work done under the supervision of this department.

Superintendent, Jno. Shearer, jr.

LABOUR DEPARTMENT.

This is a suite of rented offices, situated on Metcalfe street, opposite the Langevin block.

Two signs were made and lettered and 18 pieces of furniture varnished. A large amount of bell hanging was done, a new water tap was connected and electric fixtures and lamps as follows, were supplied:—one 3 light fixture, one 2 light fixture, three drop lights, eight desk lamps and nine wall receptacles.

Work done under the supervision of this department.

Superintendent, Jno. Shearer, jr.

LANGEVIN BLOCK.

Of rooms cleaned, tinted and painted, seven were for the Agriculture, five for the Post Office and twelve for the Interior Department. Nineteen signs were relettered for the Interior Department and three for the Post Office Department, and for the Agriculture, eight bell blocks were lettered; fifteen brass rods and curtains for office wash-basins were supplied to the Interior Department, one to the Agriculture and one to the Post Office. Eighteen tables were supplied to the Interior, four to the Post Office and four to the Agriculture Department; ten cupboards were supplied to the Interior and two to the Agriculture Department. Two chests were supplied the Interior and one to the Post Office Department. Four cushions were supplied the Post Office, one the Agriculture and thirteen to the Interior Department. A counter, two benches, two map racks, one filing case, seven draughting tables, two desks and three electric fans were supplied to Interior Department. A wash-basin was fitted up for the Post Office and one to the Interior Department. Five desk lamps were furnished the Agriculture Department and one to the Interior. Seventeen drop lights were installed in the Interior, seven in the Agriculture and twelve in the Post Office Department. Two three-light fixtures and one two-light fixture were fitted up in the Interior Department. Three shades were supplied the Interior and a like number the Post Office Department. Thirty chairs, fourteen step-ladders and six rails, with coat-hooks were supplied the Post Office Department. Twelve sets of shelves, two gas grates,

6-7 EDWARD VII., A. 1907

seven boxes, two door springs, one deflector and twenty-four coat-hooks were supplied the Agriculture Department. Picture moulding was put up in two rooms and a hot water coil supplied to the Interior Department. Two rooms in the Interior and a like number in the Post Office Department were connected by electric bells. Fourteen articles of furniture were repaired for the Agriculture Department, seventy-nine articles for the Post Office and sixteen for the Interior. Thirty-one articles of furniture were oiled and varnished for the Interior and ten for the Agriculture. Twenty-five packing boxes were supplied the Post Office Department. A large quantity of lumber was used for shelving, that for the Interior Department amounting to over 5,000 feet. General repairs were made to woodwork, plaster, cement work, joinery, painting and glazing.

Work done under the supervision of this department.

John Shearer, jr., superintendent.

BRANCH OF ROYAL MINT.

This building, which was described in my report of last year, is still under course of construction. Plans are being prepared for heating apparatus.

Plans, &c., prepared by this department.

Clerk of works, Geo. Stockand.

Contractors, Sullivan and Langdon.

PARLIAMENT BUILDINGS.

Alterations and improvements of the ventilation of the House of Commons, involving new fans and motors in basement, increased heating surface and area of openings and tubes, enlargement of flues and additional plant inclusive of air washers.

One new hardwood floor was laid; one small room was divided from the large second floor committee room; the public lobby, stairways and corridors were painted and decorated; thirteen rooms were cleaned, tinted and painted; all the floors of the second or attic floor were revarnished; four floors were constructed in ventilation shafts; a new brick smoke-box was built for one of the boilers; three new wooden porches were provided and a platform built in the residence of the Speaker of the Senate. A three-inch pipe was laid from one of the hydrant pipes, so connected to the electric fire-pump as to ensure a supply of water in the tanks when the city pressure fails. A water closet, bath, lavatory basin, radiator, electric bell, four electric light brackets, four drop lights, two switches, twelve shades and the necessary wiring were fitted up and installed in the residence of the Speaker of the Senate. A new coil and an electric bell were fitted up for the librarian. Electric fans were installed in the chief reporter's room and the House of Commons smoking room. The barber shop had connection made with the air-compressor. There were electric lights provided as follows, viz.: Six desk lamps, twenty-five drop lamps, one four-light fixture and one two-light fixture. Two call bells and one extension bell were provided and wired for and one lavatory basin was provided and fitted up. Furniture was supplied as follows: Thirteen cupboards, seventy-two newspaper files, nine tables, two book-cases, six sets of shelving, two window deflectors, two pigeon-hole cases, twenty-four photo frames, ten sets rods and curtains, four chests, eight stepladders, three hand barrows and four chair cushions. Four chairs were repaired and seven sofas were re-upholstered; thirty-eight articles of furniture repaired and eight doors were covered with cloth.

The carpets were taken up, cleaned and relaid, the double windows and summer blinds were taken off, stored, cleaned and put on periodically, and the roofs, roads and footpaths kept clear of snow during the winter.

Work done under the supervision of this department.

Superintendent, J. Shearer, jr.

PRINTING BUREAU.

The additions to this building which were alluded to in my last report are still under construction. The boiler-house was altered and improved, and a new boiler

SESSIONAL PAPER No. 19

with mechanical stoker was placed and connected. Three rooms were renovated, fifty feet square of hardwood floor were oiled and two signs were lettered.

REPAIRING STREETS, &c.

Wellington street from the intersection of Bank street to Dufferin bridge was paved with bitulithic pavement; all the chainstones were taken up and removed; a concrete gutter and curb was substituted and the sodding between the roadway and footpath was broadened. The sidewalks on bridges were repaired and partly renovated; scraping, cleaning and general repairs were done to the various roadways, footpaths and streets under the control of the department. Rubbish, scrapings and ashes were removed from the East block, West block, Langevin block, Parliament building, the workshops, Printing Bureau, the Museum, the several rented buildings and the various streets, and deposited at Nepean Point; the grass at Printing Bureau, about Cartier Square, Wellington street, two bridges, Survey Office, Fisheries Museum and Geological Museum was kept clipped, manure was drawn on and removed therefrom, and the ashes removed from the boiler houses and furnace rooms of the various buildings; the roadways, sidewalks, footpaths, roofs and yards kept clean of snow during the winter.

Work done by the departmental staff.

ROYAL OBSERVATORY, TRANSIT HOUSE.

This building, which was described in my report of last year, has been completed. Plans, &c., prepared by this department.

Clerk of works, P. Canty.

Contractors, McGillivray & Labelle.

CANADIAN BUILDING, SLATER STREET.

The electric bell service was removed from the Union Bank building and rehung in the Dairy Commissioner's office, while three new bell connections were hung from the messenger room. A water filter was supplied and connected in the private secretary's room. Two desk lamps and three drop lights were installed.

Work done under the supervision of this department.

Superintendent, Jno. Shearer, jr.

SUPREME AND EXCHEQUER COURTS.

A wooden partition with doors, &c., was built across attic. There were supplied four tables, six stepladders, four packing boxes, one fire screen, four wooden brackets, one bell board and one desk lamp; six chairs were upholstered and repaired, three screens were repaired and recovered, three signs were lettered, ten pieces of furniture were varnished, picture moulding and picture hooks were put up in two rooms; windows, floors and one cupboard were repaired and some locks replaced.

Work done under the supervision of this department.

Superintendent, Jno. Shearer, jr.

VICTORIA MEMORIAL MUSEUM.

This work, which was described in my report of last year, was continuously under construction during the summer and autumn of 1905, and work was resumed with the opening of the spring, 1906.

Plans and specifications prepared by this department.

Clerk of works, P. Canty.

Contractor, George Goodwin.

6-7 EDWARD VII., A. 1907

OTTAWA.

ADDITION TO THE WESTERN BLOCK, INCLUDING ALTERATION OF RECORD WING OF EXTENSION.

This work, which was described in my report of last year, is now nearly completed. Plans, &c., prepared and work supervised by this department.
Contractor, George Goodwin.

WESTERN BLOCK

Water closets were fitted up in the Marine Department, two on the first floor and four in the attic. Twenty-one hardwood floors were laid, two in the Inland Revenue, three in the Marine and Fisheries, six in the Public Works, ten in the Customs, ten rooms in the Inland Revenue were tinted and painted; fourteen rooms in the Marine and Fisheries were cleaned; ten rooms in the Public Works were cleaned and painted; four rooms in Railways and Canals were done over and three rooms in Trade and Commerce were cleaned and tinted. Five floors were oiled and varnished in the Inland Revenue and four in the Marine and Fisheries. Two hundred and sixty-eight packing boxes were supplied to the Public Works and sixty to the Customs. One hundred and sixty-five articles of furniture were oiled and varnished, sixty-five for Customs, sixty for Public Works, nineteen for Marine and Fisheries, twenty for Railways and Canals and one for Trade and Commerce. One hundred and thirty-seven signs were lettered, forty-one for Customs, forty-six for Railways, twenty-five for Public Works, six for Inland Revenue and nineteen for Trade and Commerce, in addition to nineteen labels for Public Works. Twenty cupboards were made, twelve for Public Works, six for Marine and Fisheries, one for Customs and one for Railways and Canals. Sixty-three tables were supplied, twenty-four for Marine and Fisheries, twenty-two for Public Works, three for Railways and Canals and seven for Trade and Commerce. Four desks were supplied, one to the Customs and three to Railways and Canals, and repairs were made to six in the Customs, two in the Inland Revenue, four in the Marine and Fisheries, five in the Railways and Canals and a number in the Trade and Commerce Department. One hundred and eleven chairs were repaired—in some cases resealed, thirty-five in Customs, forty-six in Public Works, sixteen in Marine and Fisheries, ten in Railways and Canals and four in Inland Revenue. Eight stepladders were furnished, three to Trade and Commerce, four to Public Works and one to Customs Department. Twenty-one coat and hat rails with hooks were supplied, two to Customs, nine for Public Works, two for Railways and Canals and eight for Marine and Fisheries Department. Six fire screens, two for Customs and four for Public Works Department. Fifty-three frames for pictures or photographs, four for Customs, twelve for Marine and Fisheries, thirty-five for Public Works and two for Railways and Canals. Twelve wooden signs were supplied to the Customs Department and also six desk racks.

Window deflectors were supplied, one to the Customs, four to the Marine and Fisheries, three to the Public Works and to the Railways and Canals Department. A pigeon-hole case was supplied to the Customs Department. Sets of shelving were supplied to Customs, Marine and Fisheries, Public Works and Railways and Canals. Newspaper files were supplied, one to the Marine and Fisheries and twenty-eight to Railways and Canals. Two foot-stools were supplied the Customs and eight to the Marine and Fisheries Department. Two book-cases were supplied to the Inland Revenue Department and two file cases to the Railways and Canals. Eleven new chair cushions were supplied, two to the Marine and Fisheries, seven to the Public Works and two to Railways and Canals and repairs were made to nineteen cushions for Public Works. Twenty rods and curtains for wash basins were supplied, one for Inland Revenue, six for Marine and Fisheries and thirteen for the Public Works. Five rooms were moulded for pictures for the Public Works and three for the Marine. One sofa and two stools were supplied to the Customs. Window ventilators were supplied, three to the Inland Revenue. Four ink-stand cabinets were supplied to the Railways and Canals. The Department of Public Works was supplied with thirty stretchers, twenty-three drawing boards, one hundred and thirty-six map rollers, twenty-four thumb screws, sixty

SESSIONAL PAPER No. 19

trestles, two wooden sinks and two cabinets. One map rack was supplied to the Marine Department and one slope to the Inland Revenue. In the new addition thirty-six steam radiators with mains, branches, &c., were put in by the departmental staff which also fitted up six water closets, five lavatory basins, soil pipe and two heating coils, &c., in the Marine lavatories. One telephone was wired for in the Marine and Fisheries Department. There were electric lighting installed as follows:—Drop lights, sixteen in Public Works, one in Marine and Fisheries, twenty-four in the Railways and Canals, seven in the Inland Revenue, thirteen in the Trade and Commerce and three in the Customs. Desk lights, twelve in the Public Works, three in the Marine and Fisheries, five in the Railways and Canals, two in the Mounted Police and three in the Customs. In the Public Works, one 1-light and two 2-light brackets were installed as also one 3-light cluster. Electric shades, four in number, were supplied to the Public Works, two to the Railways and Canals and one to the Mounted Police. Three lamp guards were supplied the Customs Department. One telephone was installed for Marine, one electric radiator for the Customs and electric bells in two rooms for the Railways and one for the Public Works Department.

A large number of lights of glass was renewed.

There were also a large number of minor jobs of painting, lettering and of joinery. The roofs, roads and footpaths were kept free from snow. The winter sashes and summer blinds were cleaned, put on, taken off and stored periodically.

Work done under the supervision of this department.

Superintendent, J. Shearer, jr.

RAILWAY COMMISSIONERS' BUILDING, QUEEN STREET.

This is a rented building occupied by the Board of Railway Commissioners. There were supplied two plan cases, two tables, ten packing boxes, three cushions and two foot-rests. Repairs were made to six chairs, three files, three cushions, one cupboard, one window, doors, &c.

The basement was shelved, 4,500 feet of lumber being required for the purpose. Ten electric fans were installed; one call bell was hung. There were installed thirteen drop lights, twelve desk lamps and two bracket lights.

Work done under the supervision of this department.

Superintendent, Jno. Shearer, jr.

BUILDINGS AND GROUNDS GENERALLY.

In addition to the works mentioned in the foregoing, there are innumerable smaller works, i.e., there are items of repair done by the roofers, the masons, plumbers and other trades; items taking each a number of days' work of a tradesman besides material to accomplish—for example, in the Parliament buildings and East and West block, 1,261 lights of glass were reglazed. Besides all these, in connection with the various other buildings, the property of the government, there are similar works of repair, painting, furnishing, tinting, &c., in connection with a number of rented buildings; also such works as repairs to and renewals of coal and other sheds, as well as works of a general character, such as the erection and taking down and storing of porches, winter boarding outside steps, &c., &c., all of which are done by the departmental staff.

PETERBOROUGH.

ADDITION TO POST OFFICE.

A brick addition, 19 feet by 8 feet, one story in height, was built at one end to furnish additional office space for postmaster and also a new lobby. There was also a concrete platform and steps.

Work Supervised by Wm. Blackwell, architect.

Contractor, D. Billingham.

6-7 EDWARD VII., A. 1907

SAULT STE. MARIE.

PUBLIC BUILDING.

This building, which was described in my report of last year, has been completed, and fitted up with electric lighting, hot-water heating, office fittings, furniture, &c. Plans, &c., prepared by this department.
Work supervised by James Thomson, architect.
Contractors, MacPhail, Maccarty & Wright.

ST. CATHARINES.

DRILL HALL.

This building is completed, and fitted up with electric lighting, hot-water heating town water service and fixtures, fittings and furniture.
Plans, &c., prepared by this department.
Resident architect and clerk of works, G. Dolson.
Contractors, Messrs. Sullivan & Langdon.

SANDWICH.

POST OFFICE.

This building, which was described in my report of last year has been nearly completed, and is being fitted with electric lighting, hot-water heating, office fittings, furniture, &c.
Plans, &c., prepared by this department.
Clerk of works, John Maclean.
Contractor, Geo. Alfred Proctor.
Contractor for fittings, J. Maclean.
Contractor for footpaths, C. W. Cadwell.

STRATFORD.

ARMOURIES.

This building, which was described in my report of last year, is still under construction, and is being fitted with electric lighting, hot-water heating, armoury fittings, &c.
Plans, &c., prepared and work supervised by H. C. Macbride, architect, London.
Contractors, Nagle & Mills.
Contractor for fitting, D. Essen.

ST. THOMAS.

ALTERATIONS OF THE PUBLIC BUILDING.

A part of the wall of the annex, on one side, immediately at the rear of the main building, was increased in height about four feet and re-roofed ; part of the annex was taken into the post office, the floor was raised, the dividing wall broken out and a girder was inserted to carry the annex wall above. The basement stairs were changed in position, a new terra cotta partition constructed and two vault doors changed in position. A new entrance with stone landing steps and iron railing was provided. Contract signed 29th September, 1905.

Plans, &c., prepared by this department.
Contractor, John Purdom.

SESSIONAL PAPER No. 19

TORONTO.

CUSTOM-HOUSE ALTERATIONS.

The alterations now in progress under contract signed September 7th, 1905, involve alterations from basement to roof mainly in the internal arrangements. The main stairway was removed but the wall on first and second remains. In the basement about one-third of the area was re-floored in concrete and wood, one room in brick and two rooms in tile; a new iron stairs, some brick partitions and the plumbing and fitting of a new lavatory and W. C. room as well as a new basin and sink in lunch room were put in. On the ground floor new marble entrance steps were laid, a tile floor was laid throughout and a marble dado about the great hall as well as wood floors in the rooms. A number of the ground floor windows were altered and some doors changed in position. On the first floor, new wood floor was laid over the greater portion of the area, some doors were changed in position and lavatory basins, sinks and W. C fitted up. The front portion of the second floor was re-floored and laid out as apartments for the caretaker.

Plans and specification prepared and work supervised by S. G. Curry, architect.
Contractors, The Carlyle Construction Co.

DRILL HALL EXTENSION.

This is an extension of the drill hall eastward toward Chesnut street (195 feet long by 188 feet broad, using the same materials and following the original lines and design. The basement is to be but partly excavated and consists of furnace rooms, fuel rooms and stores; the ground floor in the middle, 183 feet by 64 feet width, is occupied by the riding school; on the north side, cavalry armoury and stores, and field battery gun shed armoury and harness rooms; on the south side store rooms, wagon rooms and harness rooms, while on the first floor are officers' mess, sergeants' mess, C.O. rooms, orderly rooms, lecture room, band room and lavatories. The contract was signed on July 14, 1905.

Plans, &c., prepared by this department and work supervised by S. G. Curry, architect.

Contractors, Sullivan & Langdon.

DRILL HALL—ADDITIONAL STORY ON LEANTO, NORTH SIDE.

This work, which involved the removal of the roof and ceiling of ground floor of the leanto on north side of hall and the construction of another story of brick with flat roof was contracted for on July 14, 1905. The addition provides eight new rooms and a passage the entire length of the whole. The band gallery was lengthened, the windows in north wall of hall were altered, new doors were made in north wall of hall and the heating apparatus was extended to heat the new rooms.

Plans and specification prepared by this department and work supervised by S. G. Curry, architect.

Contractors, Wickett Bros.

POSTAL STATION 'F.'

On August 5, 1905, a contract was entered into for the construction of this building on the corner of Yonge and Charles streets. It has three stories and basement, 61 feet by 80 feet; the materials are fireproof; the external walls of cut stone on street frontages and brick elsewhere, the basement walls of stone, the partitions brick or iron and plaster, while the stone walls are lined with brick. The stairs are iron; the floors iron and concrete covered with wood, excepting in furnace-room and fuel-room, where they are concrete only. The roof is iron and concrete and is covered with tar and gravel. The basement contains furnace and fuel-rooms, brick safe, W.C. room, lavatory-room

6-7 EDWARD VII., A. 1907

and stairway; the ground floor is the post office; the first floor is undivided, while a part of the second floor is divided into apartments for the caretaker.

Plans and specification prepared by this department and work supervised by S. G. Curry, architect.

Contractors, Brown and Lowe.

PROVINCE OF MANITOBA.

BRANDON.

IMMIGRATION HALL.

A drain was laid and new valves were supplied to boiler under the supervision of Jos. Greenfield, superintendent of public buildings, Manitoba, Winnipeg, Man.

POST OFFICE.

Additions were made to the mail delivery screen, inclusive of 486 new boxes, a new counter was constructed in money order office and a new key case supplied. The woodwork of the building was painted and repairs made to heating and plumbing.

Work supervised by Jos. Greenfield, superintendent of public buildings, Manitoba, Winnipeg, Man.

DAUPHIN.

IMMIGRATION BUILDING.

The building and the fences were painted under the supervision of Jos. Greenfield, superintendent of public buildings, Manitoba, Winnipeg, Man.

WINNIPEG.

CUSTOM HOUSE.

Alterations of long room were effected, the building was fitted up for gas lighting, the heating system was added to, repaired and altered, some repairs were made to plumbing and some filing cases supplied.

Work supervised by Jos. Greenfield, superintendent of public buildings, Winnipeg, Man.

EXAMINING WAREHOUSE.

Repairs were made to heating system under the supervision of Jos. Greenfield, superintendent of public buildings, Winnipeg, Man.

IMMIGRATION BUILDING.

This building, which was described in my report of last year, has been continuously carried on, and is now nearing completion. A hot-water heating system was fitted up. The offices were fitted and furnished and the site fenced.

Plans, &c., prepared by this department and work supervised by Jos. Greenfield, superintendent of public buildings, Winnipeg, Man.

Contractor for construction, Kelly & Mitchell.

Contractor for heating system, Cottar Bros.

Clerk of works, Jas. Chisholm.

SESSIONAL PAPER No. 19

WINNIPEG.

IMMIGRATION HALL AND IMMIGRATION HOSPITAL.

These buildings were painted and kalsomined throughout, fire escapes were provided, the coal-bins were bricked about, repairs were made to heating system, plumbing, glazing and range and the site was fenced. A new typewriter desk was supplied. All under the supervision of Jos. Greenfield, superintendent of public buildings, Winnipeg, Man.

LANDS OFFICE.

Repairs were made to heating and gas and a new smoke pipe was supplied under the supervision of Jos. Greenfield, superintendent of public buildings, Winnipeg, Man.

MILITARY STORES BUILDING.

A contract for the construction of this building was entered into on May 16, 1906. It is a two-story and attic brick building with stone dressings and on a stone basement, consisting of a main portion 65 feet by 47 feet for military stores and an adjunct 24 feet by 35 feet for caretaker's residence, a portion of the basement of which is finished for living rooms. The stone portion is lined throughout with brick, has brick partitions and a concrete basement floor but the adjunct has plastered walls and wooden partitions and floor, excepting in basement, where the floor is concrete. The roof is of wood, covered with metal on the slopes and tar and gravel on deck. Heating is by hot water.

Plans, &c., prepared by this department and work supervised by Jos. Greenfield, superintendent of public buildings, Winnipeg, Man.

Contractors, J. & J. McDiarmid.

POST OFFICE.

The stamp vendors office and the observation galleries were extended; two new pumps were fitted up and connected; the mezzanine floor was extended; the steam boiler was repaired and partly renovated; additions were made to the ventilation system; the cage in bank office was roofed; some hose and hose-racks were provided; a new toilet room was provided; the registration office was enlarged and the parcel room altered; repairs, additions, alterations and renovations were made to elevators, hot water furnaces, heating apparatus, plumbing, painting, lighting, gas fitting, pumps, tank, &c., &c., and a bag rack, tables, chairs, truck and boxes were supplied.

Work supervised by Joseph Greenfield, superintendent of public buildings, Winnipeg, Man.

NEW POST OFFICE.

The construction of this building which was described in my report of last year has since been continuously carried on and is still in progress.

Plans prepared and work supervised by Darling & Pearson, architects, Toronto, Ont.

Contractors, Kelley Bros. Co.

Clerk of works, Robert Wilson.

PUBLIC WORKS OFFICE.

Some furniture and carpets were supplied.

6-7 EDWARD VII., A. 1907

NORTHWEST TERRITORIES.**MEDICINE HAT, SASK.****PUBLIC BUILDING.**

A contract was entered into on April 3, 1906, for the erection of this building on Main Street, on a site having 75 feet frontage and extending back to a lane in the rear.

The building which is to be two stories and basement, is to have a frontage on Main street of 63 feet by a depth of 74 feet, and is to contain on the ground floor the post office, examining warehouse, weights and measures office, brick safe, W. C. room and stairway; on the first floor the customs and inland revenue offices, brick safe, lavatory and stairs and in the basement the heating apparatus and stores. The external walls are to be cut stone and brick, the basement wall stone, the piers and partitions in basement as also the safe rooms brick; the ground floor and first floor partitions are to be iron and plaster while the floors, roof and stairs, excepting the basement floor which is to be concrete, are to be of wood. The roof is to be covered with tar and gravel. The drainage is to a cesspool in yard.

Plans and specifications prepared by this department.

Clerk of Works, W. D. Williams.

Contractors, Oakes and Everard.

MOOSEJAW, SASK.**COURT HOUSE.**

A new water service and an electric light installation were put in and a drain was laid to the town sewer under the supervision of W. T. Mollard, clerk of works, Regina, Sask.

Contractor, Hugh Gillespie.

PUBLIC BUILDING.

This building which was described in my report of last year is nearly completed. A hot water heating apparatus and the necessary furniture and fittings and electric wiring are being fitted up, installed and supplied. A granolithic foot path is being laid on the street front.

Plans, &c., prepared by this department.

Contractor for construction and fittings, Patrick Navin.

Contractor for heating, The Moosejaw Hardware Co.

Contractor for electric lighting installation, J. E. Ashworth.

PRINCE ALBERT, SASK.**PUBLIC BUILDING.**

This building which was described in my report of last year is nearing completion. It has been fitted up with a hot water heating apparatus.

Plans, &c., prepared by this department.

Clerk of Works, Wm. Knox.

Contractors, Chas. Lemoine & Co.

SESSIONAL PAPER No. 19

REGINA, SASK.

COURT HOUSE.

Repairs were effected to roof, plumbing, pump, water closets, furniture, &c., under the supervision of W. T. Mollard, clerk of works, Regina, Sask.

DOMINION LANDS OFFICE AND LAND TITLES OFFICE.

A counter with screen was fitted up, some electric wiring was installed, and a number of window screens and some articles of furniture were supplied. Minor repairs and renewals of ironmongery and glazing were made.

Work supervised by W. T. Mollard, clerk of works, Regina, Sask.

GOVERNMENT HOUSE.

Some minor repairs were made to the plastering of the house.

A residence for the coachman was constructed in the grounds.

Work supervised by W. T. Mollard, clerk of works, Regina, Sask.

IMMIGRATION HALL.

The city water service and sewerage was connected with the building. The cellar was lined with lumber, the damage caused by fire was made good and the building cleaned and kalsomined.

Work supervised by W. T. Mollard, clerk of works, Regina, Sask.

POST OFFICE.

A new hot-water heating furnace was fitted up, some additional fittings were put in as also an additional water closet. Repairs were effected to electric lighting, fitting, ironmongery, &c. All under the supervision of W. T. Mollard, clerk of works, Regina, Sask.

PUBLIC BUILDING.

A contract was entered into March 20, 1906, for the erection of this building on the southwestern corner at the intersection of Scarth street and Eleventh avenue, on a plot of ground 75 feet by 125 feet, which it practically covers excepting a small strip 8 feet deep by 40 feet long at the rear and facing on an alleyway which runs parallel to Scarth street. The external walls on the street fronts, and also a return of twenty feet on alleyway, are of cut stone lined with brick; all the external walls of basement are of stone lined with brick, while the remaining external walls, the safe rooms and a number of the partitions are brick; the remaining partitions of iron and asbestic. Excepting a one story and basement portion in the rear, measuring 75 by 20 feet, lighted from the alleyway and by a skylight, together with three angle towers, one of six stories, attic and basement, and two of four stories, attic and basement, the building has three stories, attic and basement. The ground floor, main portion, contains the post office, entrances, stairway and brick safe room, and the one story and basement portion the examining warehouse and weights and measures office. On the first floor are the customs and inland revenue offices, lavatory, stairway and brick safe. On the second are storeroom, caretaker's apartments, lavatory, bath-room, &c. The attic is unfinished, and the basement is for the heating furnaces, fuel and storage. The tower roofs, skylights and coping generally are covered with metal and the deck with tar and gravel. The floor of the basement in concrete, and the remaining floors as well as the roof are of steel and concrete covered with wood.

Plans and specification prepared by this department.

Work supervised by W. T. Mollard, Clerk of Works, Regina, Sask.

Contractor, Snyder Bros.

6-7 EDWARD VII., A. 1907

WOLSELEY, ASSA.

COURT HOUSE.

Repairs and alterations of basement were effected and a new entrance provided under the supervision of W. T. Mollard, clerk of works, Regina, Sask.
Contractor, John Ferguson.

CALGARY, ALTA.

ADDITION TO POST OFFICE BUILDING.

On September 5, 1905, a contract was entered into for the enlargement of the original post office building.

The front wall, portions of the side walls and the brick vaults were retained and the new portions are being built similar in design and material to the original. It is a three-story and attic stone building on a stone basement consisting of a main portion 54 feet front by 130 feet deep, a projection at one side 18 feet frontage by 43 feet deep, and also a one-story examining warehouse 18 feet by 56 feet. It is situated, fronting on Stephen avenue, having Osler street on one side and a lane in the rear. The basement, which has a concrete floor, brick piers and partitions, and two iron stairways which ascend to the third floor, is for heating apparatus, fuel and storage; the ground floor, main portion, is the post office, and the one-story portion an examining warehouse; the first floor has three offices for the Post Office Department, a long room for the customs, three offices for the customs and one for the inland revenue, two stairways, a lavatory-room and a W.C. room; the second floor has a long room for the Inland Revenue, rooms for lands office and mines office, stairways and lavatories, and the third floor is undivided, excepting a strip on the original frontage, which is divided into rooms for caretaker. There are brick vaults, two on ground floor and three each on first and second floor. There are water-closet rooms on all floors, including basement, and a bath-room in attic. The external walls on front and rear as well as facing Osler street are of stone, but the remainder are of brick, the brick walls of front stairway being carried up an additional height above roof to accommodate the elevator. The partitions are of iron and plaster and the stairways of iron. The slopes of roof are covered with metal and the decks with tar and gravel.

Plans and specification prepared by this department.

Clerk of works, J. J. O'Gara, architect.

Contractors, The Alberta Building Co.

EDMONTON, ALTA.

IMMIGRANT SHED.

A contract for the construction of this building was entered into on July 20, 1906. It is a wooden building on a concrete basement, consisting of a main portion 60 feet by 32 feet, two and a half stories and basement, a one-story and basement vestibule 10 feet by 6 feet, in front, and a one-story and basement kitchen adjunct in rear. The basement is floored in concrete and the chimneys are brick, the remaining undescribed portions being wood. In the basement are furnace and fuel rooms, store-rooms, a stairway hall and lavatories containing baths, W.C.'s and lavatory basins; on the ground floor are two kitchens, a stairway hall and six other rooms, while the first floor has twelve rooms, with a corridor from end to end, and the attic is undivided.

Plans, &c., prepared by this department.

Clerk of works, H. J. Hanson.

Contractor, Thomas Page.

SESSIONAL PAPER No. 19

PROVINCE OF BRITISH COLUMBIA.

KAMLOOPS.

PUBLIC BUILDING.

The ground and first floors were ceiled with metal; the caretaker's apartments were cleaned, kalsomined and painted; alterations of and additions to vault fixtures were made; a set of furnace grates and two oil lamps were supplied and repairs were made to plumbing, carpentry and clock.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

NELSON.

DRILL HALL.

The external surface of the outside walls below ground was plastered with cement, under the supervision of Wm. Henderson, of this department, Victoria, B.C.

PUBLIC BUILDING.

Gas lighting was installed in inland revenue offices and caretaker's quarters; the batteries in clock were renewed; a cupboard was supplied the vault; a coal shute was inserted in sidewalk; the yard was graded; the lights over box screen were frosted; a stepladder was supplied for attic; a door lock and some fittings for box fronts were supplied and repairs were made to electric lighting, furniture, &c., and some wood-work varnished.

Work done under the supervision of Wm. Henderson, of this department, Victoria, B.C.

NANAIMO.

PUBLIC BUILDING.

Two rooms on first floor were altered to provide offices for Inspector of Fisheries, and alterations of basement and first floor including new partitions, were made for gas inspector's office. A glazed partition was erected in examining warehouse. Change and repairs to the original custom-house, now the examining warehouse, were made. Painting and kalsomining were done in the customs offices and the ladies' lavatory, the walls and ceilings damaged by making connection with old portion were papered, the street letter boxes were painted and varnished. Six signs, five of tin and one of glass, were lettered. A lavatory basin was supplied to the inland revenue, prism lights and plate-glass were fitted up for the money order office, a table with lamp and equipment were supplied to the fisheries office, cork carpet and shelves and a new drop letter box to the post office. Repairs were made to the brick floor and plaster work in basement.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

NEW WESTMINSTER.

INDIAN AFFAIRS AND FISHERIES OFFICE BUILDING.

On November 30, 1905, a contract was entered into for the erection of this building on lot 10, block 13, situated on the corner of Caernarvon and MacKenzie streets with frontages of 66 feet and 83 feet, respectively.

The building is two stories of brick with stone dressings and on a stone basement, measuring 56 feet on Caernarvon street by a depth of 34 feet. The roof, the stairs and the floors and partitions, excepting in basement, are of wood; the basement floor

6-7 EDWARD VII., A. 1907

is of concrete and the basement partitions are brick. The roof is covered with metal. There is a large brick safe room in basement as well as one on each of the upper floors.

The basement is for heating apparatus, fuel, storage, &c., and the upper floors for offices. There is a large lavatory room on first floor.

Plans, &c., prepared by this department.

Clerk of works, Wm. Turnbull.

Contractors, R. Buckland & J. Carter Smith.

PUBLIC BUILDING.

A set of balcony fire-escapes were fitted in position, a typewriter desk was supplied the lands office; stationery cupboards, umbrella stand and carpet sweeper to the Public Works office and some furniture to the customs. A wall and an iron fence were erected along the front, rear and side of the property. A new ensign was supplied. Repairs were made to smoke stack, plumbing, doors, lighting, plastering and furniture. Some alterations were effected in the Customs Department. Lamps were supplied and Yale locks put on doors of examining warehouse.

Work done under the supervision of Wm. Henderson, of this department, Victoria, B.C.

ROSSLAND.

PUBLIC BUILDING.

Some electric shades and some windows shades were supplied, the clock was repaired and some minor works of carpentry, joinery, painting and glazing done, all under the supervision of Wm. Henderson, of this department, Victoria, B.C.

VANCOUVER.

POST OFFICE.

On August 22, 1905, a contract was entered into for the construction of this building which measures 156 feet by 120 feet, on the corner of Granville and Hastings Streets.

The building consists of four floors, a basement and a subbasement, the last-named being confined to a strip in the rear, 27 feet in breadth by the length of the building. The subbasement is divided into two boiler rooms, a fuel room, a staircase hall and a lavatory room; the basement is undivided excepting a strip 24 feet along one side, which contains two stairways, two elevators, a lavatory room, and a store room; the ground floor is the post office; the first and second floors contain each nine rooms, a vault, a lavatory room and stairways, while the third floor is divided into fifteen rooms, two stairways and a lavatory room. There are two elevators. There is a clock tower rising above the corner at the intersection of the streets. The walls of the building are of cut granite and has floors, stairs, &c., of steel, concrete and other non-combustible material generally.

Plans and specification prepared by this department.

Clerk of works, Chas. Tossell.

Contractors, Kelly Bros. and Mitchell, Limited.

PUBLIC BUILDING.

Cupboards, shelving, sink and case were fitted up and doors repaired in the testing room. Partitions were removed, doors and frames built in, hoist and frame constructed, rail to platform erected and screen partition put up in parcels department. Two new skylights were put in. A counter and screen were supplied for customs long room. A partition with door and frame was erected in post office

SESSIONAL PAPER No. 19

inspector's office and a window and frame set in examining warehouse. A wall desk was supplied the customs. A still and a raw leaf oven were fitted up in sorting room. Two screens were supplied, one in dead letter office and one in sorting room. The fittings, furniture, &c., of examining warehouse, postal and express offices and of testing room were removed to other quarters.

In dead letter office, the brick walls were strapped and sheathed, a new window was put in and a new lock fixed on door. A new manhole was constructed for sewer, the sewer cleaned and drain repaired. The caretaker's quarters were fitted up with blinds. A table was supplied to tester and chairs and stools to collector of customs office and express parcels office. A fire screen was supplied to dead letter office. The customs W.C. tank was relined. The post office letter boxes and drawers were renumbered, the street letter boxes were painted and varnished, the post office box screen was varnished, the windows of stamp vendor's office were numbered, a key board was numbered and the doors and windows of weights and measures office were lettered. A mail hand-truck was supplied the post office. The post office vestibule doors were altered. The necessary alterations for the examining warehouse, postal package office and express office were made. A sink was fitted up in the dead letter office and one in the examining warehouse. Shelving and sorting cases were supplied to the post office and to the post office inspector's office. Four stools and one key board to the post office and two signs to the inspector's office which was cleaned, painted and papered. Furniture, linoleum and carpets were supplied the post office inspector's office.

The caretaker's quarters were wired for electric light. There were seventeen lamps and one one-light fixture additional installed in the post office, and twenty-three in the customs offices. Electric bell hanging was done in the post office and post office inspector's office. Repairs were made to sewer, block pavement, heating, plumbing, joinery, lighting, water service, furniture, &c. Carpets were taken up, cleaned and relaid and a large number of lights reglazed.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

VICTORIA.

INDIAN AFFAIRS AND MARINE OFFICE (OLD CUSTOM HOUSE).

A drain was constructed in furnace room; the heating pipes in indian office were covered with asbestos; three additional electric lights were put in W.C. and repairs were effected to plaster, plumbing, lighting, glazing, gutters and doors.

Works supervised by Wm. Henderson, of this department, Victoria, B.C.

PUBLIC BUILDING.

Alterations to money order office were made, new shelving was put in postal package department; new partitions were made in examining warehouse; the shelving in basement of examining warehouse was removed; new pigeonhole cases were supplied customs offices and new drawers in post office screen. Cupboards were supplied to customs offices; a clock to the public works office; electric bells were hung for appraiser, post office inspector and postmaster. A stepladder was supplied to savings bank; stationery cases for form cupboards; bookcases, shelves and chairs for the customs and a chair for the savings bank. A wash-bowl was fitted up in post office. The roof of the examining warehouse was repaired. Ventilators were placed in the walls of the savings bank vault. The freight elevator was overhauled, altered and repaired. Twelve new electric lights were installed in the examining warehouse, one in the post office, and twenty-five pendant switches in the general delivery; three portable lights and shades were supplied the inspector's office. The mail elevator had new reversing contacts installed. A number of new switches were put in and three brackets and shades were put in for the inland revenue office.

6-7 EDWARD VII., A. 1907

New bell batteries were supplied and connected, and repairs were made to wiring, switches, bells, lights, plumbing, heating, joinery, glazing, &c.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

OLD POST OFFICE BUILDING.

The galvanized iron down pipes and gutters were in part renewed and the remainder repaired. Repairs were made to plumbing, roofs and walls.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

WILLIAM HEAD.

QUARANTINE STATION.

Two water wheels were supplied; a new fence was erected at electricians' residence; some roofs were reshingled; a boat landing was constructed; the steamer *Earl* was cleaned, painted and repaired; six pairs of sash and a door were supplied battery room, disinfection house; one hospital stretcher, three hospital chairs and three ward tables were supplied; some bunks were built and the assistant superintendent's kitchen painted and kalsomined.

Repairs were made to doors and windows and repairs to various buildings.

Work done under the supervision of Wm. Henderson, of this department, Victoria, B.C.

CATTLE QUARANTINE CORRAL.

The sheds were repaired and covered with roofing; new gates were provided; the yard was graded and filled; the fences were repaired and in part renewed and the water main laid and connected with city main.

Work done under the supervision of Wm. Henderson, of this department, Victoria, B.C.

YUKON TERRITORY.

DAWSON.

ADMINISTRATION BUILDING.

The grounds were improved, a plumbing service was put in and some furniture supplied, under the supervision of S. A. D. Bertrand, superintendent of public buildings, Yukon Territory.

COURT HOUSE.

The grounds were improved, a plumbing service was put in and some furniture supplied under the supervision of S. A. D. Bertrand, superintendent of public buildings, Yukon Territory.

GOVERNMENT HOUSE.

The grounds were improved, a plumbing service was put in and some furniture supplied under the supervision of S. A. D. Bertrand, superintendent of public buildings, Yukon Territory.

SESSIONAL PAPER No. 19

DAWSON.

POLICE COURT.

General repairs were made under the supervision of S. A. D. Bertrand, superintendent of public buildings, Yukon Territory.

POST OFFICE.

A plumbing service was put in and some furniture supplied under the supervision of S. A. D. Bertrand, superintendent of public buildings, Yukon Territory.

KLUHANE LAKE.

MINING RECORDER'S OFFICE.

General repairs were made under the supervision of S. A. D. Bertrand, superintendent of public buildings, Yukon Territory.

APPENDIX A—PART III.

GENERAL CONDITIONS FOR THE GUIDANCE OF
ARCHITECTS IN PREPARING COMPETITIVE
DESIGNS FOR THE PROPOSED NEW
DEPARTMENTAL AND JUSTICE BUILDINGS
FOR THE DOMINION OF CANADA
IN OTTAWA, ONTARIO

By order of the Honourable Charles Smith Hyman, Minister of the Department of Public Works of Canada, the following conditions for competitive designs for the proposed new Departmental and Justice buildings at Ottawa have been prepared by the undersigned Board of Assessors.

CONDITIONS.

1. The government of the Dominion of Canada proposes to erect a group of buildings on the grounds forming the east side of Major's Hill park, Ottawa. These buildings will be composed of two groups—one for the Department of Justice, the other for departmental purposes. The cost of the Justice building is not to exceed 35 cents per cubic foot and the cost of the departmental building is not to exceed 30 cents per cubic foot. This competition is to be considered chiefly one of suggestion.

2. The competition to include the placing of the various buildings on the site, the laying out of avenues and roads and the connecting of Parliament Hill with Major's Hill park by a foot bridge of monumental design. The site for the buildings to be confined within the areas indicated by dotted lines on a diagram which accompanied the special pamphlet, containing conditions.

3. A Board of Assessors has been appointed, consisting of Edmund Burke, Esq., President, Province of Ontario Association of Architects; Alcide Chausse, Esq., President, Province of Quebec Association of Architects; and D. Ewart, Esq., Chief Architect of the Department of Public Works, to prepare this code and decide the relative merits of the various designs submitted.

4. The competition will be limited to resident Canadian architects who have been resident architects for one year or more; and each design must be accompanied by a declaration signed by the competitor to the effect that the design is his own and that the drawings were prepared in Canada under his own supervision.

5. Any style of architecture may be submitted, but it is suggested that some phase of Gothic would better harmonize with existing structures.

6. The competitive designs will be limited to sketches in ink, to a uniform scale of 16 feet to the inch. Brush work in Indian ink will be allowed in the elevations. The sections to be finished with a solid black tint. The lettering and figuring are to be plain and simple and confined to the name and dimensions of the rooms written in the middle of each, without explanatory comments, which are to be noted in a separate memorandum. The number of superficial feet in each room to be given, as well as lineal dimensions. The drawings to be made upon white paper.

7. The drawings must be accompanied by a brief memorandum in typewriting, explaining any points in the designs that are not plainly shown.

8. The drawings required are as follows:—Plans of the separate floors, elevations and the necessary sections. If any of the floors are duplicated plans of such duplicates will not be required.

Perspective drawings may be drawn in line or may be wash drawings in Indian ink, and with such accessories only as may be necessary to indicate the connections of the buildings with their surroundings. The perspective drawings must be set up at a scale of one-eighth inch to the foot with the plane of the drawing touching the nearest angle. All drawings, including perspective, to be made on sheets of uniform size.

If perspective drawings to $\frac{1}{4}$ -inch scale will exceed in size the sheets containing the geometrical drawings, the scale of perspective must be reduced sufficiently to permit the use of sheets of similar size.

A bird's eye or Isometrical view may also be submitted covering the whole scheme.

6-7 EDWARD VII., A. 1907

9. No motto or other distinctive device is to be attached to the drawings or memorandum. The competitor shall send his name in a sealed envelope, without distinctive mark. The assessors will number the envelopes and drawings as the packages are opened. The declaration referred to in clause 4 to be inclosed in the sealed envelope.

10. The drawings are not to be framed, glazed or even mounted upon cardboard; but to be sent flat in a folio, and to be shipped by express, prepaid, addressed to the Secretary of the Department of Public Works, Ottawa.

11. The assessors will carefully examine the designs received, and place the best four in order of merit.

12. The author of the best design will be awarded a prize of \$8,000; the second best a prize of \$4,000; the third best a prize of \$2,000, and the fourth best a prize of \$1,000. The four prize designs will become the absolute property of the Government of Canada. The drawings of the unsuccessful competitors will be returned to them within a reasonable time.

13. Any information which the assessors may find proper to furnish any of the competitors in answer to questions or suggestions will be simultaneously communicated to all known competitors. All such questions or answers must be made on or before the 15th day of January, 1907.

14. All designs submitted in the competition will, with the consent of the authors, be publicly exhibited after the award is made.

15. All designs must be in the hands of the Secretary of the Department of Public Works on or before the 15th day of March, 1907.

The following is a schedule of dimensions required or suggested:—

REQUIREMENTS FOR THE DEPARTMENTAL BUILDING.

A total floor area including interior walls, corridors, lavatories, &c., of 300,000 superficial feet. The building to be limited to five stories above basement on the park side. The arrangement of offices to be in large units, suitable for subdivision or rearrangement as may be required.

REQUIREMENTS FOR JUSTICE BUILDING.

The building may be three or more stories in height on the park side.

SUPREME COURT.

	Rooms.	Floor area. Sup. ft.	Total area. Sup. ft.
Court room.	1	....	2,500
Conference room, near court room, and to contain bookcases for judge's library.	1	....	800
Registrar's room.	1	....	600
Clerk of the court, adjoining registrar.	1	....	800
Vault in connection with above. . . . .	..	....	150
Registrar's court (chambers).	1	....	600
Judges' private rooms.	6	300	1,800
Reporters' rooms.	2	250	500
Sheriff.	1	....	300
Secretary to judges.	2	250	500
Waiting room, for counsel to consult with lawyers, must be close to court room.	1	....	400
Barristers' and counsels' room, wardrobes, basins, &c.	1	....	400
Messengers' room.	1	....	250
Library, for the several branches, and to have gallery.	1	....	8,000

 17,600

SESSIONAL PAPER No. 19

EXCHEQUER COURT.

	Rooms.	Floor area. Sup. ft.	Total area. Sup. ft.
Court room.	1	....	2,500
Judges' private rooms.	2	300	600
Registrar's office.	1	....	600
Chief clerk, adjoining registrar.	1	....	600
Vault in connection with above offices. . . . .	..	....	150
Registrar's court (chambers).	1	....	600
Deputy registrar.	1	....	350
Stenographers.	1	....	300
Messengers' room.	1	....	250
Lunch room and kitchen.	2	....	650
Waiting room.	1	....
			<hr/> 7,000 <hr/>

RAILWAY COMMISSION.

Court room.	1	....	2,000
Chief commissioner.	1	....	500
Deputy commissioner.	2	400	800
Secretary.	1	....	300
Law clerk.	1	....	300
Chief engineer.	1	....	300
Chief traffic officer.	1	....	300
Inspector of accidents.	1	....	300
Draughting office. . . . .	..	....	1,000
Record rooms.	4	1,000	4,000
Inspectors, &c.	10	300	3,000
Stenographers, &c.	8	250	2,000
Store rooms. . . . .	..	....	1,000
Vaults. . . . .	..	....	200
			<hr/> 16,000 <hr/>

DEPARTMENT OF JUSTICE.

To be divided into suitable offices and with a limited vault accommodation.

This space will be utilized by the minister, his deputy, the secretary of the department, the law clerk, and their respective staffs, &c. 20,000

Total office space (superficial feet)—60,800.

Provision to be made in addition to above floor area for corridors, staircases, elevators, lavatories, &c.

EDMUND BURKE,
President, Ontario Association of Architects.

ALCIDE CHAUSSE,
President, Province of Quebec Association of Architects.

D. EWART, I.S.O.,
Chief Architect, Department of Public Works.

PART IV

CHIEF ENGINEER'S REPORT

ON

HARBOUR AND RIVER WORKS

INCLUSIVE OF

GRAVING DOCKS AND DREDGING OPERATIONS

ALSO

ROADS, BRIDGES AND SURVEYS THROUGHOUT THE DOMINION.

REPORT OF THE CHIEF ENGINEER.

DEPARTMENT OF PUBLIC WORKS OF CANADA,
CHIEF ENGINEER'S OFFICE,
OTTAWA, December 10, 1906.

FRED. GÉLINAS, Esq.,

Secretary,

Department of Public Works.

SIR,—I have the honour to submit the annual report on the various works under my charge during the fiscal year ended June 30, 1906.

These works comprise the construction and repair of wharfs, piers, breakwaters, dams, weirs, bank and beach protection works; the improvement of harbours and rivers by dredging; the construction, maintenance and operation of government dredging plant; the construction and maintenance of graving docks; the construction, maintenance and working of slides and booms; the construction and maintenance of interprovincial bridges and approaches thereto, and of bridges on highways of federal importance in the Northwest Territories and the maintenance of military roads; also hydrographic and ordinary surveys and examinations, inclusive of precision levelling and geodetic measurements which are required for the preparation of plans, reports and estimates; the testing of cements, &c.

I have the honour to be, sir,

Your obedient servant,

EUG. D. LAFLEUR,
Chief Engineer.

PROVINCE OF NOVA SCOTIA.

AMAGUADEES.

Amaguadees Pond, Cape Breton county, lies on the northern side of East Bay, the eastern arm of the Great Bras d'Or lake, and is distant three miles from Benacadie Point, at the entrance to and sixteen miles from the head of the bay.

It is a large sheet of water, about one mile in length and a quarter of a mile in width, separated from the bay by a beach of gravel overlying clay, of from 100 to 200 feet in width, and about 4 feet high above the summer level of the lake. The outlet is at the eastern end of the beach, but as it is open only for short periods after freshets, and then is available only to small boats, the pond is not of any practical benefit to the inhabitants.

During 1902-3-4 the sum of \$3,980.52 was expended in the construction of a block and span wharf with creosoted timber substructure, extending to 11 feet at low water,

6-7 EDWARD VII., A. 1907

on the outside of the beach about 600 feet from its eastern end. The work is 128 feet long and 20 feet wide, with an 'L' on the eastern side of the outer end, 20 by 20 feet.

After the construction of the wharf, the outlet of the pond which formerly was only open at times, not only remained open, but was widened and deepened to such an extent as to interfere with the traffic to and from the wharf.

The sum of \$500 was voted for expenditure during 1905-6, towards the construction of a bridge across the inlet. The proposed work was 100 feet in length and 16 feet wide, and consisted of approaches 30 and 22 feet in length, of two cribwork blocks 12 feet in length and a span between them, 24 feet long; the approaches built of brush and stone, and the blocks of round timber, fully ballasted and protected on the outer faces with close sheathing, driven 3 feet into the bottom, and the blocks and span were covered with 4-inch plank. Of the work described, at the close of the fiscal year, the approaches and blocks were placed and partly ballasted.

The expenditure during fiscal year ended June 30, 1906, amounted to \$499.79.

AMHERST POINT.

Amherst Point is a small farming village of about 300 people, situate from two and a half to four miles southwest of Amherst Town, near the head of the bay. It is a straggling settlement of farms, but the site of the wharf is about three miles distant from Amherst. Several plans were designed for this work and it was not until early in June that the work was commenced. It is expected that this work will be completed this fall; owing to the difficulty in procuring labour the quick progress has not been made which was expected. It is built of solid rock-filled cribwork for a length of 170 feet, 20 feet wide on top, except the last 30 feet which is constructed in the form of an 'L,' 40 feet wide on top. Tides rise here from 33 to 40 feet.

Expenditure during fiscal year of 1905-6, \$1,806.88.

ANDERSON'S COVE.

Anderson's Cove, Annapolis county, is a scarcely perceptible indentation of the coast line, on the south side of the Bay of Fundy, sixteen miles east of Digby Gut, two miles east of Litchfield and two miles west of Parker's Cove. The settlement, which is called Hillsburn, comprises within a radius of about a mile, about 150 people, dependent almost exclusively on the fisheries for a living.

In order to afford some small measure of protection and shelter for the fishing boats, which were often broken and destroyed for lack of shelter, the department in 1905-6 expended the sum of \$1,813.29 in constructing a small breakwater, 162 feet long, from 7 to 13 feet high and 26 feet wide.

Spring tides rise about 30 feet.

ANNAPOLIS ROYAL.

Annapolis Royal, as the town is called, is the oldest town in the province of Nova Scotia, having been founded in 1605. It is beautifully situated at the head of Annapolis basin, and on the left or south side of Annapolis river. It has a population of about 2,000 people and is the centre of one of the most fertile districts of Nova Scotia. On the water-front of the town there has not been, for a great many years, a public wharf for landing. The Queen's wharf, so-called, at the east end of the town, is supposed to have been first constructed during the French occupation in the 17th century. In or about 1868, it was restored and extended, and made serviceable for the use and accommodation of the steamer which plied between Annapolis, Digby and St. John, N.B., before the construction of the railway from Annapolis to Yarmouth. Both the original construction and the extension and restoration were in cribwork.

The wharf being for a great many years a complete wreck, and to a certain extent a danger to navigation, the department in 1905-6 expended the sum of \$3,885.75 in

SESSIONAL PAPER No. 19

building a completely new structure on the site of the old. At the close of the fiscal year the work was about three-quarters finished.

When completed it will consist of an approach of stone and earth, walled on each side, 250 feet long, 30 feet wide and of an average height of 8 feet. This approach will be followed by a pile-work structure of 240 feet long by 30 feet wide, with a T on the outer end 90 feet long on the face by 40 feet wide. The piles in the T are creosoted. Along the face, the work will be about 36 feet high, with 32 feet of water at H.W.O.S. T. and about 7 feet at low water. On the north side of the stem, next to the T, will be a flight of steps for the accommodation of boats and small craft, and in the middle of the length of the face of the work, a lifting slip operated by a powerful double hand winch, for the convenience of steamers.

Spring tides rise about 29 feet, neaps 23 feet.

APPLE RIVER.

This work, or proposed work, was let out by contract to Messrs. J. E. & H. Biglow, of Canning, N.S., for \$7,300. Some slight work has been performed upon it during the latter portion of the month of June and no doubt will be finished this fall.

Expenditure during 1905-6, \$78.63.

ARISAIG.

Arisaig, Antigonish county, is on the southeastern shore of Northumberland Strait, about fifteen miles southeast from Cape George.

The works at this place include a pier on the northern, and a breakwater on the southern side of the cove.

The breakwater, constructed during 1887-8, was 380 feet in length, extending to 5 feet at low water, and 20 feet wide, with an 'L' on the southwestern side of the outer end, 40 feet long and 20 feet wide. With the exception of 80 feet at the inner end which is of stone, it is constructed of close-faced native timber cribwork, fully ballasted; the outer 50 feet and the 'L' were protected by close-sheathing.

From natural decay, the top of the work is in a weak condition, and the outer end with the 'L' has been destroyed by the teredo.

The sum of \$2,200 was appropriated for expenditure during 1905-6, in reconstructing the top of the approach at the outer end for a distance of 50 feet, and for the construction of a creosoted timber block, 20 by 30 feet, outside of the old end, to be connected with the old work by a span over the remains of the old end.

Nearly all the necessary materials required for the work to be done, with the exception of the creosoted timber, were procured during the winter. During the latter part of May, 1906, the repairs to the outer end were commenced, and by the end of the fiscal year they were completed, but nothing was done towards the construction of the new block, owing to the non-delivery of the creosoted timber required. The repairs to the outer end consisted in ballasting, placing new stringers, covering, cap and close-sheathing for a distance of 50 feet, and the total amount expended during the fiscal year, including the native timber required for the block and span, is \$1,253.52.

BADDECK.

Baddeck, the shire-town of Victoria county, is on the northern shore of the Little Bras d'Or lake, near its entrance to St. Patrick's channel.

On June 5, 1903, a report was forwarded on the construction of a public wharf on three different sites, and estimates were submitted of the cost of the wharf on each site, including the cost of the property required in each case.

Differences of opinion as to the site to be chosen delayed the preparation of the plan and specification for the proposed wharf, but the site has now been selected and the property transferred to the Crown.

Expenditure during last fiscal year, \$3,000.

6-7 EDWARD VII., A. 1907

BAILEY'S BROOK.

Bailey's Brook, Lismore, Pictou county, is a large stream emptying into the Strait of Northumberland at a point about ten miles to the eastward of the entrance to Merigomish harbour, and six miles to the westward of Arisaig.

The channel protection works, undertaken in 1902-3 and completed in 1904-5, consist of a breakwater on the eastern side 240 feet in length and 20 feet in width, on top, extending to low water mark, and a shear-dam on the western side, 130 feet in length and 12 feet in width founded at low water.

During the fiscal year 1905-6, the sum of \$2,042.36 was expended in procuring materials for a proposed extension of the shear-dam, 164 feet in length, 16 feet in width to within 20 feet of the outer end, and 30 feet in width over the outer 20 feet, and in constructing, placing and ballasting 120 feet of its substructure.

The extension was undertaken with the object of improving the channel which is nearly dry at extreme low water. Spring tides rise $4\frac{1}{2}$ feet.

BARACHOIS.

Barachois, Victoria county, is a settlement, at the mouth of the Barachois river, on the northern side of St. Ann's bay, and about three miles from the entrance into St. Ann's harbour. It has a snug little boat harbour formed by an outlying beach and connected at its southern end with the bay by a shifting channel through the gravel beach.

The shifting of the channel was caused by the movement of the gravel along the shore, during northerly gales; in order to prevent this action and to improve the channel, it was decided to build a breakwater on the northern side of the entrance to the channel.

During 1903-4, the sum of \$1,499.80 was expended in procuring the materials required for the construction of a round timber cribwork, extending to $2\frac{1}{2}$ feet at low water, 200 feet long and 15 feet wide, in constructing the bottom of the work up to within 2 feet of the top, and in placing about one-half of the ballast required.

During the last fiscal year the sum of \$1,034.36 was expended in completing the work commenced in the previous year, and in extending the work by the construction of a block, 32 feet long and 20 feet wide.

BARRINGTON.

Barrington, Shelburne county, is forty-five miles southeast of Yarmouth, and thirty-five miles southwest of Shelburne. Population about 700. Fishing and farming are the chief industries. Several schooners are fitted out at this place for fishing, and coastal steamers make this an important port of call, whilst it is the mainland terminus of the steam ferry service to Cape Sable Island.

The private wharfs at this place having no material depth of water at L.W.O.S.T., this department in the year 1888-9, constructed a wharf. This wharf extends over mud flats, bare at low water, to Sherose channel; it is 944 feet long, 20 feet wide on top, and has 12 feet of water at its outer end, at L.W.O.S.T. The shoreward end, for 188 feet, is built of round-log, stone-filled cribwork, all the remaining portion being pile trestle bents, 15 feet distant centres. In the old work there was a gradual rise of several feet, which made the outside end 6 or 7 feet above H.W.O.S.T.; this was reduced by 3 feet; this lowering of the level allows an extreme spring tide to spray the top timbers which acts as a valuable preservative in all works situated in salt water. At the outer end is an 'L,' 32 feet wide, with a fore-length of 72 feet along the channel, and on which is a freight shed, 35 feet long and 20 feet wide.

During the last fiscal year the sum of \$5,740.63 was expended in this reconstruction work. Besides cutting down the work, the entire covering, stringers, guard-rails, and caps had to be replaced, whilst all new fenders and many old piles were replaced

SESSIONAL PAPER No. 19

with new ones, thoroughly driven and fastened. The head of the wharf, on the outside end and along the 'L,' was fendered with hardwood piles.

BARRINGTON PASSAGE.

This passage is between the mainland and Cape Sable Island. Its length is about six miles, whilst in width it varies from one-quarter mile to one mile. It has been used as a general thoroughfare for all smaller vessels up to 12 and 13 feet draught along the coast from Halifax to St. John. Many schooners have been severely damaged as well as several coasting steamers, through striking obstructions in this passage. This department therefore had an examination by an expert diver who reported that the obstructions consisted of large rocks, and that their removal would be expensive yet simple.

In 1904-5, the sum of \$1,999.90 was expended, and 425 tons of stones were removed.

During the last fiscal year an additional sum of \$3,000, was expended, and 675 tons of stone removed. The work was done by the same plant as that used at Clark's Harbour, and with even better results, though strange to say, that through the swiftly running tide here, the divers could only work a portion of the time. The stones were larger, in fact one estimated to weigh 35 tons was raised to the surface and dragged inshore at high tide, where it now rests. The cost per ton is about \$4.54. Spring tides rise 9½ feet, neaps, 7 feet.

BASS RIVER.

Bass River, Colchester county, is a farming and manufacturing village of about 500 people, situated on the north side of Cobequid bay, the eastern arm of the Bay of Fundy. It is half way between Truro and Parrsboro, or about twenty-eight miles from each place.

In 1894-5, the department built, by contract, at a cost of \$3,240, a public wharf of pile work, 210 feet long, 40 feet wide, with an ell at the outer end 55 feet long and 40 feet wide. At the outer end of the ell, it was found necessary to build a small block of cribwork, containing 8,000 cubic feet, on account of the hard nature of the bottom preventing the piles from being driven to a proper depth. Along its outer face the work is 26 feet high, giving a depth of 22 feet at H.W.O.S.T.

In the fiscal year 1901-2, the department expended the sum of \$1,099.11 in extending the pile-wharf built in 1894-5. The extension is 40 feet square, substantially built of pile-work and giving the wharf the form of the letter 'T.' A small freight shed was also built on the wharf for the accommodation of local shippers and merchants.

In 1902-3, the sum of \$55.06 was expended in enlarging the freight shed on the wharf.

In 1904-5, the sum of \$1,200 was expended for renewing the whole top of the wharf, including plank, stringers and guard timbers, in addition to a number of new fender piles which were very much decayed.

In 1905-6, the sum of \$493.38 was expended in further repairs. These repairs consist of renewals to planking, bracing and fender piles.

BATTERY POINT.

Battery Point, Annapolis county, is a fishing settlement of about 150 people, situated on the east side of Digby Gut, about four miles northeast from the town of Digby, and fifteen miles southwest from the town of Annapolis.

In 1904-5 the sum of \$1,987.32 was expended in constructing a breakwater for the protection of the fishing fleet, comprising forty to fifty boats. The work is 90 feet long, 26 feet wide, 8 feet high at the shore end and 19 feet high at the outer end. The approach is a stone embankment, 38 feet long, 26 feet wide and from 4 to 8 feet high.

6-7 EDWARD VII., A. 1907

At the end of the fiscal year the work was completed, with the exception of a few fenders.

In 1905-6, the sum of \$2,000 was expended in constructing an extension to the breakwater. The new block is 60 feet long, 26 to 30 feet wide and from 20 to 29 feet high, very strongly built of round-log cribwork, furnished with a break on the seaward side, close-sheathed on the seaward side and outer end and on the inner or southern side, being provided with a flight of steps for the accommodation of boats.

Spring tides rise 27 feet; neaps, 23 feet.

BAXTER'S HARBOUR.

Baxter's Harbour, King's county, is a small harbour on the south side of Minas channel, Bay of Fundy, about midway between Scott's Bay and Hall's Harbour, or about six miles distant from each. The settlement has a population of about 200 people, engaged in fishing and farming.

The harbour is merely a slight indentation in the coast line, with a small wharf or breakwater on one side and a reef of rocks on the other, leaving an opening of about 180 feet in width between them, into which small schooners can enter at about two hours ebb and flood.

The little breakwater, which was built many years ago by the inhabitants, aided by the provincial government, having become a complete wreck, the department, in 1905-6, expended the sum of \$2,258.69 in building a substantial breakwater of cribwork on the site of the ancient structure. The new work, which was not quite completed at the end of the fiscal year, is 100 feet long, 26 feet wide and from 5 at the inner end to 20 feet high at the outer end, well fendered and filled with ballast.

Spring tides rise 39 feet; neaps, 33 feet.

BAYFIELD BREAKWATER.

Bayfield, Antigonish county, N.S., is on the southern shore of St. George's bay, fifteen miles to the westward of the northern entrance to the Strait of Canso.

There are two works at this place: a wharf 442 feet in length, built in 1892-4, and a breakwater (core and stone embankment), 760 feet in length, commenced in 1879 and completed in 1888.

Repairs and improvements to the breakwater, including the construction of a concrete wall, 525 feet in length, over the inner face of the cribwork core (150 to 675 feet from the inner end), and the reconstruction of the stone covering on each side of the wall, undertaken in 1903-4, were completed in 1904-5, with the exception of 300 feet of covering on the seaward side and of the grouting (with concrete) between the wall and high water, on each side, over a distance of 365 feet (150 to 515 feet from the inner end).

During the fiscal year 1905-6 the sum of \$1,600 was expended in completing the repairs and improvements undertaken in 1903-4.

BAY ST. LAWRENCE.

Bay St. Lawrence, Victoria county, is on the northern extremity of Cape Breton island, and lies between Cape North and Black Point.

At the head of the bay and separated from it by a beach of sand, gravel and stone, there is a small lake or pond, about three-quarters of a mile in length and half a mile in width, with a considerable depth of water.

In 1887, a channel to low water was opened by the department through the beach into the pond, but soon filled in again.

During 1888-9, the channel, which had been alternately opened by freshets and closed during northerly gales, was reopened, and protected on its western side by a cribwork block, 53 feet in length, beyond high water mark, and by a work of brush and stone, 30 feet in length, from high water mark inwards. The channel remained

SESSIONAL PAPER No. 19

open for a short time after the completion of the protection work, but it was closed again at the inner end of the works by sand during a northwesterly gale. The crib-work block still remains, but the brush and stonework was washed out by the sea.

The total expenditure on this work up to June 30, 1889, was \$3,992.17.

The sum of \$5,500 was voted for expenditure during 1905-6, towards the formation of a boat harbour, and on November 29, 1905, a plan and specification for the works required to make a permanent channel through the beach and to make the pond accessible to boats at all times of tide were submitted for approval, but up to the end of the fiscal year tenders for the work had not been called.

Expenditure during 1905-6, \$47.97.

BEAR COVE.

Bear Cove, Digby county, is a slight indentation not more than 400 feet deep in the coast of the mouth of St. Mary's bay, Bay of Fundy. It is situated twenty-three miles north of Yarmouth and equi-distant from Cape Cove on the south and Meteghan on the north, being about five miles from each. The population of the settlement, within a mile of the cove, comprises a couple of hundred people, chiefly dependent for living upon fishing, though some little farming is also carried on. The fishing fleet comprises about twenty-five small boats, and the annual value of the catch, embracing cod, herring, lobsters, &c., is from \$7,000 to \$10,000.

In order to afford some small measure of protection for the fishing fleet, the department on October 10, 1905, awarded a contract in the sum of \$5,748.92.

The work was begun in May, 1906, and at the close of the fiscal year it was about half completed. Spring tides rise 21 feet, neaps, 17 feet.

The expenditure during the last fiscal year amounted to \$2,231.07.

BEAR RIVER.

The village of Bear River, situated at the head of navigation, five miles above the two bridges, highway and railway, which are near the mouth of the river, is an important and prosperous settlement partly in Annapolis and partly in Digby counties, the river forming the boundary between the two counties. Large quantities of piles, cordwood and lumber are annually shipped to South America, the West Indies and the United States, and the volume of shipping may be judged by the fact that the bridges, in each of which there is a swing span, are opened from 300 to 400 times each year for the passage of vessels.

In 1901-2, the sum of \$3,000 was expended in removing the upper portion of an old pier of the highway bridge, which was rebuilt by the provincial government about twelve years ago, on a site about 100 feet farther up stream. This old pier bottom, which was removed to a depth of 5 feet below low water spring tides, was so close to the channel that it was a source of danger to vessels passing up and down. The dropping pier, on the down stream side of the swing span of the highway bridge, was also rebuilt in substantial pilework, the new pier being 180 feet long, 25 feet wide, and from 20 to 30 feet high, strongly built of pile bents, well braced, fendered and bolted, provided with mooring posts and rings, and with three rows of hardwood walings on the river face. Of the total expenditure of \$3,000, the sum of \$349.17 was expended in the purchase of piles and timber for the rebuilding of the dropping pier on the upper side of the highway bridge.

In 1902-3, the sum of \$1,611.35 was expended in rebuilding the dropping pier on the up-stream side of the Victoria highway bridge. The work consists of a piece of well and strongly built pile wharfing, 180 feet long, 16 to 27 feet wide, and 20 to 32 feet high, covering the site of the old dropping pier, which was so far decayed and eaten away by the limnoria as to be no longer safe or serviceable.

In 1905-6, the sum of \$584.86 was expended in the purchase of materials for the purpose of rebuilding the upper end of the dropping pier, which was severely injured by the heavy ice of the exceptionally severe winter of 1904-5.

6-7 EDWARD VII., A. 1907

BECKERTON.

Beckerton, or Port Beckerton, Guysborough county, is a harbour on the southern or Atlantic coast of Nova Scotia, about midway between Indian and Country harbours, and about five and a half miles distant from the entrance of each.

In 1904-5, the sum of \$2,192.03 was expended in procuring the materials required for a native timber block and span wharf to extend 190 feet to 12 feet at low water, to consist of an inner block, 40 by 20 feet, four intermediate blocks, each 18 by 20 feet, and an outer block, or head, 24 feet in line of work by 50 feet in length, and in constructing the inner block and the substructure of the second and third blocks.

During the last fiscal year, the sum of \$2,639.90 was expended to complete the wharf, to build a railway and a warehouse.

BIG LORRAINE.

Big Lorraine, Cape Breton county, is a boat harbour on the Atlantic coast of Cape Breton island, three miles to the eastward of the entrance to Louisburg harbour.

The sum of \$1,000 was voted for expenditure during 1905-6, for the improvement of the boat harbour. At the end of the fiscal year no active work had been commenced, outside of procuring the necessary information as regard the depth of water, &c.

BIG SLUICE.

This is a channel between two islands lying along the southern side of Clark's Harbour, about one and a half miles from the mainland. This channel at high tide was partially navigable, but never with safety, as the character of the boats used by the fishermen had changed from a draught of 2 or 3 feet to 5 or 6 feet. To use this channel meant another hour at least for the fishermen on the fishing grounds any day they were outside. Therefore, to deepen it the sum of \$1,500 was expended this year in effecting the necessary changes; 985 tons of small stones were removed, the channel is now free at nearly all tides for those boats, whilst those of the older class can use it at all times.

BLACK ROCK.

Black Rock, Victoria county, is a small fishing station on the northeastern shore of Cape Breton island, about midway between the harbours of St. Ann's and Ingonish.

A small landing beach, partly protected by a long and narrow ledge, known as Black Rock, about 300 feet long, 10 feet wide and from 4 to 6 feet above the level of high water, running about parallel to the general coast line, and distant some 60 to 150 feet therefrom, has been used by a few fishermen for landing purposes; but during southerly and northeasterly gales to which the beach is exposed, the boats have to be hauled up upon the bank for safety. This bank is of clay, it has a slope of about 1 to 1, and the top is about 75 feet above the level of high water.

For the purpose of reaching the beach, the fishermen aided by small grants from the local government, cut out a narrow path on the face of the bank, wide enough to permit them to haul up their fish, and their boats when not in use or for safety during gales.

During 1899-1900, the sum of \$500 was expended by the department in improving and widening the path and in protecting its lower end by cribwork.

During the present year, the sum of \$49.75 was expended in improving the path which had been damaged by the falling in of the clay bank, on the upper side.

BOISDALE.

Boisdale, Cape Breton county, is situated on the southeast side of St. Andrew's channel, an arm of the Little Bras d'Or lake, about fifteen miles northeast of Grand Narrows, and is a station on the Intercolonial railway.

SESSIONAL PAPER No. 19

Plan and specification for the construction of a public wharf were submitted to the department on November 11, 1905, and on March 15, 1906, a contract for its construction was entered into with Messrs. Reid & Archibald, in the sum of \$4,995, but up to the end of the fiscal year the work had not been commenced.

The work under contract is a block and span structure extending to 11 feet at low water, 187 feet in length and 20 feet wide with an 'L' at the outer end, 20 by 40 feet; the blocks are to be constructed of round timber, laid open-faced, with creosoted timber substructure.

Expenditure during last fiscal year, \$199.21.

BOULARDERIE (ROSS FERRY).

Ross Ferry Landing, Victoria county, is on the northern side of Boularderie island, and on the southern shore of the Great Bras d'Or channel, thirteen miles to the westward of its entrance into the Atlantic ocean.

During 1895-6-7, a wharf was constructed by the department at a point about half a mile to the eastward of the ferry landing, extending to 12 feet at low water, and consisting of a creosoted pile approach and a crib structure; during 1897-8, the wharf was connected with the public road by a road about 320 feet in length, including a small bridge.

During the fiscal year ended June 30, 1906, the sum of \$274.21 was expended in the renewal of upper fenders and chocks on the outer end face of the wharf and around the corners, in placing new covering and cap where required, in gravelling the road in places and in slight repairs to the bridge.

BOURGEOISE INLET.

Bourgeoise Inlet, Richmond county, commonly called River Bourgeoise, is on the northern side of the eastern entrance to Lennox passage (a strait connecting St. Peter's bay with the Strait of Canso) and about four miles westward of St. Peter's canal, at the head of St. Peter's bay. It extends inland three-quarters of a mile and then branches east and west. The depth, at low water, at the entrance, is 12 feet, and over the greater part of the area inside from 12 to 18 feet. Spring tides rise $5\frac{1}{2}$ feet.

During the fiscal year 1905-6, a wharf on the northern side of the inlet, nearly midway between its east and west extremities and nearly opposite the entrance, known as 'Boyd's Wharf,' was purchased by the department and the work of reconstructing and extending it undertaken.

The work proposed includes raising and strengthening 'Boyd's Wharf' which is 49 feet in width, and extending it 24 feet, with creosoted pile work, to $9\frac{1}{2}$ feet at extreme low water.

Preparations were made, but active work was not yet commenced on June 30, 1906.

The total expenditure during the fiscal year of 1905-6, amounted to \$1,048.79.

BRETON COVE.

Breton Cove, Victoria county, is situated on the northeastern shore of the Island of Cape Breton, about midway between St. Ann's harbour and Ingonish bay.

On July 18, 1904, a contract was entered into in the sum of \$5,885, for the construction of a wharf to serve the purposes of a boat landing, and to afford shelter for fishing boats.

The work of construction, commenced in May 15, 1905, was carried on in a very vigorous manner, and was brought to a satisfactory completion on July 22, 1905.

The wharf is a continuous cribwork with creosoted timber substructure, extending to 4 feet at low water, 194 feet in length and 16 feet wide, with an 'L' on the western side of the outer end 24 by 20 feet, and an inclined landing, built on creosoted timber piles, 4 feet wide and 46 feet long, on the inner face, inside of the 'L.'

6-7 EDWARD VII., A. 1907

The improvement has proved very beneficial to the inhabitants of a very large section of country, as passengers and freight from and to the ss. *Weymouth*, which calls off here twice a week from the Sydneys, can now leave or land on the beach, in boats under shelter, instead of doing so on a rough and open beach; and the fishing boats find perfect safety in all weather under its lee.

BRIDGEWATER.

Bridgewater, Lunenburg county, is the centre and headquarters of a large and important business in the manufacture and export of lumber. It is a thriving town of 2,000 to 2,500 people, situated twelve miles from the mouth of La Have river. It is 100 miles southwest from Halifax by the coast, and 14 miles due west from the town of Lunenburg. It is the headquarters of the Halifax and Southwestern Railway.

During the year 1905-6, the sum of \$1,568.52 was expended by the department in removing, by means of submarine divers, a large number of boulders from the bed of the river, which have been for many years a serious menace to the shipping of the place.

Spring tides rise 6 feet, neaps, 5 feet.

BROAD COVE MARSH.

Broad Cove Marsh, Inverness county, is on the Gulf of St. Lawrence, twelve miles south from Margaree harbour.

The wharf at this place, on its completion in 1888, extended 400 feet to 12 feet 10 inches at extreme low water. It was badly damaged in January, 1894, and subsequently carried away to within 207 feet of the inner end. In 1894-5-6 the inner 207 feet was repaired and strengthened; in 1897-8 a small amount was expended in repairs.

When repairs were undertaken in 1904-5, only 100 feet of the work remained. During that year, the sum of \$999.85 was expended in extending it from 100 feet, from the inner end 25 feet to 2 feet at extreme low water.

During the fiscal year 1905-6, the sum of \$3,699.99 was expended in completing a further extension, 98 feet in length, with the exception of close-fendering, between fenders, on the seaward side 18 to 55 feet from the outer end, at the outer end, and on the inner side 27 to 56 feet from the outer end.

The depth at extreme low water at the outer end of the 98 foot extension is 7 feet. Spring tides rise $4\frac{1}{2}$ feet.

BURLINGTON.

Burlington, Hants county, with a population of about 350 people, is a farming settlement, five miles north of the county town of Windsor, on the right bank of the mouth of Kennetcook river.

In 1901-2, the department expended the sum of \$3,499.99 in constructing a public wharf for general shipping purposes. The work, which is built of blocks and spans, is 222 feet long and 25 feet wide. In the whole work there are nine blocks, from 11 to 20 feet long, in stem of wharf, and from 6 to 27 feet in height. The spans, which have a uniform length of 13 feet, are eight in number. The outer end of the work which, including the ell, has a face length of 59 feet, is 25 feet high, and at L.W.O.S.T. has a depth of 23 feet of water.

In 1902-3, the sum of \$1,590.79 was expended in completing the road approach, in building a small freight shed on the wharf, and in filling with solid cribwork the four outer spans, it having been found that southerly winds drove the sea through the openings, causing vessels alongside to strike heavily against the wharf.

In the fiscal year 1905-6, the department expended the sum of \$99.96 in placing an apron of brush and stone at the southwest corner of the work, to prevent the scouring and undermining of the work by the current of the ebb tide.

Spring tides rise 40, neaps, 36 feet.

SESSIONAL PAPER No. 19

CANNING.

Canning, King's county, is a prosperous village of about 1,500 people, mostly engaged in farming and fruit raising, situated on the north or left bank of the Habitant river, which, about two and a half miles below, debouches into the Basin of Minas. It is an important station on the Kingsport branch of the Dominion Atlantic Railway, which connects with the main line at Kentville, eleven miles to the south.

In 1904-5, the sum of \$891.27 was expended in the purchase of timber for the construction of a cribwork wharf.

In 1905-6, the sum of \$14,137.08 was expended in continuing the construction of the wharf. It consists of a piece of cribwork 260 feet long, with an ell or return 90 feet long, 22 feet high and 22 feet wide on top. The back batters 8 inches to 1 and the front 1 inch to the foot. The whole block is founded on piles, driven to rock and cut off level with the mud. The cribwork, at the end of June was 17 feet high, or within 5 feet of the full height. The excavation of the berth in front, and the filling up behind were not completed at the end of the fiscal year.

CAPE NEGRO ISLAND.

Cape Negro island is situated about midway between Shelburne harbour and Cape Sable island. It is two and a half miles in extreme length, divided into two sections of nearly equal size, by a narrow stretch of shingle and gravel, which is dry at all tides. This stretch of gravel forms a natural breakwater to the small harbour lying on its north side. The southern side of the beach is at all times exposed to heavy seas, and from continual wearing away gradually allowed the tide, about the year 1885, to ebb and flow over it.

The provincial government, in the year 1886, built a piece of beach protection, 100 feet in length, over the lowest portion of this beach. This not proving adequate, this department, in 1889-90, extended and repaired the old work. The new work was then 189 feet long, 12 feet wide, and of an average height of 3½ feet. It was built of round-log continuous, stone-filled cribwork with cross-ties every 10 feet in length of the work, and a continuous ballast-floor, laid on the lower course of the longitudinals.

This work having in the natural course of events decayed so that it was threatening the separation of the two islands, this department, during the last fiscal year, expended the sum of \$1,162.80 in reconstructing and extending it. The present work is of the same character as the old one, except we buried about 2 feet in height of the entire length of the work before reaching the original surface of the beach. It is 400 feet long, about 6 feet high, and 10 feet wide on top. Spring tides rise here about 8½ feet, neaps, 5½ feet.

CHARLO'S COVE.

Charlo's Cove, Guysborough county, marked on the charts 'Charlo's harbour,' is on the northern shore of Tor bay, a bay on the Atlantic coast of Nova Scotia, to the westward of Whitehaven.

The sum of \$5,000 was voted for expenditure during 1905-6, towards the construction, by contract, of a breakwater 900 feet in length; instructions were received to prepare plan and specification for the same.

On December 28, 1905, plans and specifications for a breakwater, 900 feet in length, and 16 feet wide, with an 'L' on the eastern side of the outer end, 38 feet long and 16 feet wide, constructed with native round timber and protected on the seaward side with a stone talus, were submitted to the department, but up to the end of the fiscal year no further action was taken in the matter.

Expenditure during 1905-6: \$52.53.

6-7 EDWARD VII., A. 1907

CHEBOGUE HARBOUR.

Chebogue harbour, Yarmouth county, is situated about 7 miles south of the town of Yarmouth. Near its mouth, and surrounded by Fox island, Veal island, Jacko island, and Shortliff point, is a small but well protected anchorage or roadstead, which affords shelter to a considerable number of fishing vessels and other small craft engaged in fishing and general trade. The anchorage is partly protected on the south by Fox island, but its western portion, which is mostly dry at low water, and much used at or near high tide, by boats plying between Chebogue Point and other ports, and by other craft, is guarded by a gravel bar or beach. This beach is 800 feet long, about 20 feet wide from high water to high water and 4 to 5 feet above high water ordinary spring tides.

To preserve the beach and the anchorage north of it, the department in 1900-1, at a cost of \$1,798.34, built 360 feet in length of beach protection work. The cribwork is $8\frac{1}{2}$ feet high, 8 feet wide on top, plumb on the beach or shoreward side, battering 1 in 4 on the back or harbour side, and substantially built of round logs, well bolted, fendered, filled with ballast and covered with 3-inch plank.

In 1901-2, the sum of \$1,311.79 was expended in extending the beach protection work built the previous year. The extension is 243 feet long, $9\frac{1}{2}$ feet in mean width, $8\frac{1}{2}$ feet high, and strongly built of round-log cribwork, well fendered, filled with ballast and covered with 3-inch plank. The whole work, which is doing excellent service in the protection of the roadstead, is now 603 feet in total length.

In 1903-4, the department expended the sum of \$67.77 in finishing, with plank covering and fenders, the outer 80 feet in length of the beach protection work built in 1900-2.

In 1905-6, the sum of \$48.25 was expended in replacing some of the floor plank and guard timbers of the beach protection work, that had been broken by ice during the previous winter.

CHEGOGGIN.

Chegoggin, Yarmouth county, is a small fishing and farming village, with a population of 200 people, situated on the Bay of Fundy coast, about 5 miles north of Yarmouth. The little bay of the same name is one-third of a mile deep, north and south, and about the same east and west, fully exposed to the southwest, but sheltered from every other quarter. It is dry at low tide, but at high water has a depth of from 12 to 14 feet.

Over half a century ago, a breakwater was built by the proprietors of the marsh, in a position immediately west of the present work. It was totally destroyed about 20 years ago, not a vestige of it being now visible.

In the winter of 1895-6, the inhabitants, aided by a grant of \$45 from the municipal council, built a small breakwater, 80 feet long, $12\frac{1}{2}$ feet wide, and from 6 to 11 feet high, on the south side of the stream outlet. In 1899-1900, the sum of \$598.12 was expended by the department in lengthening the breakwater by the addition of a new block, 60 feet long, 15 feet wide and from 10 to 13 feet high. It is cheaply but substantially built of round-log cribwork, of the usual type.

In 1900-1, the breakwater was further extended a length of 51 feet, at a cost of \$692.21. The new block was 11 feet wide on top with side batters of 1 in 12, and from 12 to 13 feet high. In addition to the extension, a piece of the shoreward end of the work was rebuilt, 30 feet long, 8 feet wide and from 7 to 9 feet high, at a cost of \$88.03.

In 1902-3, the sum of \$76.58 was expended in raising the shore end of the breakwater a height of from 2 to 3 feet, for the purpose of preventing the gravel and sand from washing over and filling up the mouth of the stream, where the fishermen keep their boats.

In 1903-4, the sum of \$188.67 was expended in the purchase and delivery of timber, for the extension of the breakwater.

SESSIONAL PAPER No. 19

In 1904-5, the sum of \$1,498.58 was expended in extending the breakwater by a new block 90 feet long, 15 feet wide and from 13 to 16 feet high, substantially built of round-log cribwork, of the usual type.

In 1905-6, the sum of \$299.79, was expended in completing the breakwater extension built last year, the work done consisting of the fenders, guard-timbers and a portion of the plank covering that last year's vote did not suffice to complete.

CHETICAMP HARBOUR.

Cheticamp harbour, Inverness county, is on the west coast of Cape Breton island, 14 miles to the northward of Margaree harbour.

The harbour is formed by Cheticamp island and a beach of sand and shingle between its southern extremity and the mainland; it is entered, from the north, through a dredged channel.

The appropriation for 1905-6, was for expenditure towards the construction of a work to arrest the movement inwards, of a beach on the mainland, opposite the inner end of the dredged channel, and the consequent shoaling of part of the harbour and wharf property.

During the months of May and June some brush and stonework was built, at a total expenditure of \$2,003.60.

CHEVERIE.

Cheverie, Hants county, with a population of about 350, is situated on the right or east bank of the River Avon, where it debouches into the Basin of Minas, some 15 miles north of Windsor, the county town. It is a good farming district, but the principal trade of the place is the quarrying and shipment of gypsum to the United States.

A wharf, about 100 feet long, was built here many years ago by the provincial government. In 1873-1874, the Department of Public Works lengthened it 70 feet, at a cost of \$2,338.88, the extension being of open round-log cribwork, like the old work. In 1882, a further extension of 182 feet was built at a cost of \$5,000. This piece of work is of square timber, close-faced, 25 feet high and 25 feet wide on top, the same width as the former, and the sides batter 1 in 12. In 1885 the sum of \$600 was expended in effecting some much needed repairs to the shoreward side of the wharf. In 1884, the department built a detached breakwater, 300 feet distant from the outer end of the wharf, for the purpose of protecting the latter from northerly seas, to which it was exposed. This piece of work consists of solid cribwork, 130 feet long, 20 feet wide on top, 35 feet wide at base and about 23 feet high, built of square timber and close-faced on all sides. The seaward side, to the height of 10 feet below high water of spring tides, has a slope of 1 in 1, the sloping faces being covered with 6-inch plank. The block is provided with mooring posts to assist vessels coming to berth at the wharf, as well as with ring bolts and ladders.

In 1887-8 the sum of \$500, and 1896-7 the sum of \$100 were expended in extensive repairs. On the outer 100 feet in length the flooring, guards and some of the fenders were renewed; on the next 105 feet the work received new ties, stringers, guards, flooring and fenders; on the next 60 feet shorewards most of the flooring was renewed; 205 feet in length of the wharf, included in the above lengths, was raised a height of 1 to 3 feet. In all, 69 new fenders were placed and 250 tons of new ballast was put in. In the fiscal year ending June 30, 1902, the sum of \$768.23 was expended in the purchase of timber for the extension of the detached breakwater built in 1884, as described above.

In 1902-3, the sum of \$2,999.34 was expended in the construction of an extension to the detached breakwater. The new block is 100 feet long, 25 feet wide on top, 22 feet high, battering on the landward side 1 in 4 and plumb on the seaward face, with a break 5 feet high. It is substantially built of stone-filled cribwork and close-sheathed on the seaward side.

In 1903-4, the sum of \$1,487.29 was expended in completing the work.

6-7. EDWARD VII., A. 1907

In 1904-5, the sum of \$800 was expended in renewing the top of the middle third in length of the wharf, 80 feet long, 11 feet deep and 30 feet wide. The appropriation did not quite suffice to complete the work.

In 1905-6, the sum of \$1,000 was expended in taking down and rebuilding a portion of the shoreward end of the cribwork, 80 feet long, 8 to 12 feet high and the full width of the work, and in rebuilding a reinforcing block on the north side of the work, 100 feet long, 5 to 8 feet wide, to the full height of the work.

Spring tides rise 40 feet, neaps, 36 feet.

CHURCH POINT.

Church Point, Digby county, is situated on the southeast side of St. Mary's bay, six miles southwest from Weymouth. It has a population of 200 people, engaged in farming and fishing.

The work, which consists of a wharf, a retaining wall and a breakwater, appears to have been built between the years 1855 and 1856, at the joint expense of the provincial government and the inhabitants, the expenditure of the government having been \$61,055.66. In 1875-6 the department expended the sum of \$2,000, the inhabitants contributing an equal amount, in repairing the northern face and in building an ell, 72 feet long by 20 wide, at right angles to it, with the object of preventing gravel from working around the outer end. The movement of the gravel, which is from south to north, has always been more or less a difficulty and a detriment to this port.

In 1890-1, the gravel having worked around the outer end of the breakwater and formed a bar across the entrance to the loading berth, a small groyne, 40 feet long and 24 feet wide, was built, projecting at right angles from the outer or northwest corner of the breakwater. The groyne was extended in 1894-5 a further distance of 30 feet, and in 1896-7 by a length of 120 feet and width of 16 to 25 feet, by a height of 10 to 20 feet, all of round-log cribwork. The sluice gates at the head of the dock, where the fresh water stream makes its exit, were rebuilt in order to cause the stream to scour away the gravel from alongside the wharf front.

In 1900-1 the sum of \$800 was expended in rebuilding 63 feet in length of the wharf front, 16 feet high and from 10 to 20 feet wide, 35 feet of this length being close-piled.

The sluice way was entirely rebuilt and fitted with double lifting gates instead of singles; the floor of the sluice was lowered 5 feet and an apron, extending 13 feet up stream and 50 feet down stream, was constructed of 3-inch plank, well spiked to the heavy stringers, bedded in close-packed stone and close-piled at both ends to prevent scour.

In 1902-3 the sum of \$1,800 was expended in rebuilding 134 feet in length of the wharf wall. The new piece is 15 feet wide at bottom, 18 feet wide at top and 20 feet high, solidly built of stone-filled cribwork.

In 1903-4 the sum of \$2,995.21 was expended in further reconstruction of the wharf wall begun in 1902-3, the length of the work built being 158 feet, with height from 19 to 21 feet and a width from 8 to 13 feet.

In 1904-5 the sum of \$2,100 was expended in taking down and rebuilding a piece of wharf wall, 100 feet long, 19 to 22 feet high, and from 10 to 18 feet wide, in the continuation and completion of the work done the previous two seasons.

In 1905-6 the sum of \$1,200 was expended in extending westwardly the groyne, which prevents the gravel from entering the schooner berth. The new block is 62 feet long, 25½ feet wide and 8 feet high, or within 15 feet of the height of the rest of the work.

CLARK'S HARBOUR.

Clark's Harbour is a village of about 1,700 people, situate on the southwest side of Cape Sable island; it is considered the second most important fishing centre of Nova Scotia.

SESSIONAL PAPER No. 19

The harbour, though spacious, is not of the best, and in the channel, which approaches near the several private wharfs in this village, were many large boulders, which rendered, not only the navigation of vessels, but also the navigation of the smaller fishing boats dangerous. The department had already provided a breakwater to protect the boat anchorage, and in 1904-5 the sum of \$2,993.40 was expended in removing a portion of these rocks, some 575 tons.

During the last fiscal year an additional sum of \$4,000 was expended in removing the remainder. For this latter amount 785 tons of stones were removed. The channel is now very satisfactory, though there may be some further work in the future, yet at present we can anticipate none. The stones, when blasted, broke up into quite small sections, so that the work cost more than similar work at other places, yet the cost per ton for the whole work was about \$5.15.

COUNTRY HARBOUR.

Country Harbour, Guysboro' county, is on the Atlantic coast of Nova Scotia immediately west of Isaac's Harbour. It has an excellent land locked anchorage in $4\frac{1}{2}$ to 7 fathoms, 4 miles inland, and is navigable for large vessels $6\frac{1}{2}$, and for small vessels to Narrows Point $8\frac{1}{2}$ miles inland. Boats can ascend the river to the head of tide 2 miles above Narrows Point.

Of the \$2,200 appropriated for expenditure in 1904-5 in removing obstructions in the river, at the head of tide, to facilitate the passage of rafts of timber and of barges and boats carrying lumber and cordwood, a small amount (\$140.66) was expended in June, 1905, in procuring materials and plant and in making preparations for carrying on the works of removing obstructions.

During the fiscal year 1905-6, the sum of \$2,200.04 was expended in excavating a channel through a reef, at 'Hell Gate,' and in removing the boulders obstructing the channel below that point.

COW BAY (PORT MORIEN).

Cow Bay (Port Morien) Cape Breton county, is on the eastern coast of Cape Breton island, about 18 miles to the eastward of the entrance to Sydney harbour.

A breakwater built by the owners of the Gowrie coal mine, on the north side of the bay, came under the charge of the department in 1873. It originally extended 1,374 feet to 17 feet at low water, or to 23 feet at high water, and was about 44 feet in width. The area of the basin inclosed between it and the shipping pier of the Gowrie mine, now the property of the Dominion Coal Company, was 17 acres, 10 acres of which had a depth of from 9 to 17 feet at low water.

The breakwater was seriously damaged during the great gale of August 24, 1873. Extensive repairs and improvements were made nearly every year up to 1895, when it consisted of 220 feet of old work, protected on the seaward side by a beach of shingle and boulders; 360 feet of old work, 44 feet in width, with a new inner face work and a 'break' on the seaward side built over the remains of the old work; and 793 feet of inner work with counterforts and connecting outer face works. The inner and outer face works were from 30 to 20 feet apart; they were connected by tie walls and the spaces were filled with earth and stone.

In 1895 and 1896, 260 feet of the breakwater (1,114 feet from the shore end outward) were destroyed; the outer face-work, from 1,114 feet from the shore end inward, was badly damaged, and ballast was carried over the work and deposited in the dock, along the inner face, from 581 feet to 1,114 feet from the shore end.

Large expenditures have been made every year since 1897 in repairing and strengthening the breakwater from 1,114 feet from the shore end inward. The outer works have been reconstructed and strengthened by filling the face-chambers with

6-7 EDWARD VII., A. 1907

concrete and by close-piling; the stringers and covering of the inner work, from 581 feet to 1,114 feet from the shore end, have been renewed.

During the fiscal year 1905-6, the sum of \$16,956.84 was expended in repairing and strengthening the outer face works, including filling in some of the outer face-chambers with concrete and renewing the close-piling in places, and in nearly completing the reconstruction of 350 feet of inner face-work, 187 to 537 feet from the inner end, including the construction of a new cribwork face, 11 feet in width on top, and 4 feet in average height (from the bottom to low water); the cutting down of the old work, 22 feet in width, to low water, and the construction of cribwork, 32 feet in width on top, and 10 feet in height (low water to 5 feet above high water) over it and the new face-work.

COW BAY RUN.

Cow Bay Run, Halifax county, is situated on the east side of the mouth of Halifax harbour, on the Atlantic coast, about 2 miles east of Devil Island. It is a broad bay, formed by a narrow strip of beach, about a mile in length, separating the Atlantic from a fresh water lake, having an area of about $1\frac{1}{4}$ square miles. The outlet of the lake, which is a small brook flowing through the beach, is used by the fishermen of the locality for the purpose of taking their boats into the lake for shelter in stormy weather. The action of the seas has, however, many times caused the outlet to fill up with gravel, flooding the shores of the lake and making access thereto impracticable. A heavy freshet in the early spring of 1902, swept the gravel out of the inlet and enlarged it to greater dimensions than it hitherto had. The department, during the fiscal year 1903-4, in order to maintain the usefulness of this outlet, expended the sum of \$2,063.94 in the purchase and delivery of timber for the purpose of constructing a substantial breakwater.

In 1904-5, the sum of \$2,000 was expended in constructing a breakwater, for which timber was delivered in 1903-4. The work, which is substantially built of stone-filled cribwork, is 200 feet long; the shoreward half length being 10 feet wide and from 6 to 8 feet high. The outer half 16 feet wide and from 9 to 10 feet high. At the end of the fiscal year, the work still lacked fenders and covering.

In 1905-6, the department expended the sum of \$500 in completing the breakwater. The work done consists of placing fenders for the whole length of the work, and in raising the outer portion of the work and planking for the whole length.

CRIBBIN'S POINT.

Cribbin's Point, Antigonish county, is on the west side of St. George's bay, 8 miles to the southward of Cape George, 5 miles to the northward of the entrance into Antigonish harbour.

The wharf, completed in 1892-3, extended 300 feet in a southerly direction from the point, and has an approach 195 feet in length. It is 20 feet in width for a distance of 120 feet from the inner end, and 30 feet for the remaining 180 feet; the inner 50 feet being of stone, and the outer 250 feet, of close-faced timber work, fully ballasted.

The native face-timbers having become weakened by the ravages of the teredo, during 1896-7-8-9, the outer end, the seaward face, for a distance of 20 feet, and the inside face for a distance of 10 feet, were close-piled with creosoted timber piling; a talus of quarried stone was placed on the seaward side over a distance of 130 feet from the outer end; the work was reballasted where necessary, and a 'timber break,' 100 feet in length and $2\frac{1}{2}$ feet in height, above the cap-timber, was constructed on the seaward side of the inner end of the wharf, to prevent the sand outside from washing onto the work during storms.

During 1899-1900, the sum of \$1,000 was expended in obtaining a portion of the creosoted timber required in the construction of a proposed extension of the wharf.

During the year 1900-1, the sum of \$3,079.98 was expended in procuring the balance of the timber required for the extension, and in repairing the outer end of the

SESSIONAL PAPER No. 19

old work, which was almost destroyed during the severe gales in the autumn of 1900. The repairs consisted in the reconstruction of the top of the outer end of the wharf, for a distance of 66 feet and to an average depth of 8 feet, and in placing heavy quarried stone in the talus on the seaward side of the reconstructed work.

As the sand at the end of the wharf, at which there was originally 11 feet of water at low water, had made up to a height of about 6 feet, since its completion, leaving but 5 feet of water at low water, it was deemed necessary to found the extension of the original bottom, and the dredge *George Mackenzie* was engaged from May 30 to July 12, 1901, in dredging out the foundation for the new work, and the approaches thereto, at a cost of \$1,604.44.

During the year 1901-2 the sum of \$2,896.31 was expended in the construction of the extension to the wharf, for which the materials were procured during 1899-1900-1. The new block is 48 feet long and 20 feet wide and is placed across the end of the wharf, forming an 'L' 18 feet in length, intended to retain the stone in the talus. The block is of an average height of 20 feet, and is constructed of round timber cribwork, laid open-faced with creosoted timber substructure, close-sheathed on all outer faces, and filled in solidly with ballast.

During the year ended June 30, 1905, a sum of \$2,127.41 was expended in close-sheathing the whole of the inner face of the old work; a portion of the top at the inner end, comprising floor-stringers, covering and cap, was renewed; the stone retaining wall at the inner end was repaired; the 'timber break,' on the seaward side of the inner end, comprising floor-stringers, covering and cap, was renewed; the stone retaining necessary; new ballast was placed where it had settled, and additional heavy stone was placed in the talus.

During the present year, the sum of \$872.49 was expended in close-sheathing the seaward face of the work, in renewing floor-stringers and covering, and in reballasting the outer end, the talus on the seaward face was raised by placing additional heavy quarried stone.

CROSS ISLAND.

Cross Island, Lunenburg county, situated in Lunenburg bay, about 7 miles south from the town of Lunenburg, is a barren island of about one square mile in area, containing a population of about 200 people, whose sole occupation is fishing.

During the fiscal year 1905-6, the department expended the sum of \$299.73 in dredging by hand a small channel through which the fishermen are able to enter the main harbour, during southerly and easterly storms, when the sea is too great to permit them entering the main channel, opening directly to the east. The channel is from 20 to 30 feet in length and was dredged to a depth of 4 feet at L.W.O.S.T.

Spring tides rise $6\frac{1}{2}$ feet, neaps, $5\frac{1}{2}$ feet.

CUNNINGHAM'S POINT.

Cunningham's Point, Guysborough county, is on the southern side of Milford Haven river (Guysborough harbour), an extensive inlet at the head of Chedabucto bay, 8 miles inland, and within half a mile of the head of navigation for small vessels.

In 1904-5, the sum of \$529.05 was expended in procuring nearly all the timber (except floor stringers and covering) required for a native timber wharf, extending 92 feet from high water to $10\frac{1}{2}$ feet at extreme low water, to consist of a stone abutment and embankment, two cribwork blocks each 18 by 20 feet, and an outer block 20 by 40 feet, with one span of 13 and two of 16 feet, and in constructing the substructures of the inner and central blocks.

During the year 1905-6, the sum of \$1,946.36 was expended in completing the wharf, in constructing a rough retaining wall, at high water, on each side of the embankment, in levelling up between the retaining wall and roadway, and in excavating above the roadway to make storage room for timber.

6-7 EDWARD VII., A. 1907

DELAPS COVE.

Delaps Cove, Annapolis county, is situated on the south shore of the Bay of Fundy, 12 miles to the eastward of Digby Gut.

The breakwater is constructed immediately to the eastward of the mouth of a small pond, which affords safe shelter for fishing boats, and a convenient place for keeping small vessels during the stormy winter months. The breakwater itself affords a good landing place for coasters and small schooners, the pier breaking off all easterly storms, and the formation of the shore on the opposite side of the stream forming a natural breakwater.

This breakwater was built by the department in 1878-9. It is 156 feet long, 25 feet 3 inches wide, and is constructed of round timber, with square timber faces, its easterly side being sheathed with 8-inch timber. It is provided with a break 4 feet 6 inches high, along its seaward or easterly side, and its covering is of 6-inch plank.

In 1885, the sum of \$50 was spent in repairing the foundation of the seaward face, and depositing large stones along it, to prevent the gravel from washing away.

1899-1900, the sum of \$1,000 was expended in protecting the entrance to the pond and in placing an anchor and buoy off the outer end of the pier, to enable vessels to warp out and proceed to sea, avoiding the danger of going ashore on the western headland, to which they were formerly exposed.

The opening into the pond was protected by extending the western face of the pier 100 feet inwards, along the margin of the stream, or to where this latter opens into the pond, and in raising the beach on the seaward side of the pier to prevent the stone and gravel from being thrown over the sea wall. The wharfing along the stream is of an average height of about 16 feet, and 12 feet wide and the entrance to the pond is now clear and unobstructed.

The warping anchor is a large rock, placed in position and fitted with proper chains and tackles. During the summer months it has a spar buoy attached, which is removed in winter to avoid the danger of drifting ice.

During the year 1901-2, the sum of \$400 was expended in repairs to the breakwater. The work done consists of the renewal of the greater part of the covering, 200 feet of new stringers, 9 new mooring posts, 13 fenders, 118 feet of guard timbers, 200 tons ballast, besides petty and miscellaneous repairs to the break and the outer end of the work.

In the fiscal year 1905-6, the sum of \$1,127.12 was expended in building an extension to the breakwater, 30 feet long, 25 to 28 feet wide and 21 feet high. At the close of the fiscal year the work was not quite completed, owing to delay in procuring labour and materials.

Spring tides rise about 30 feet.

D'ESCOUSSE.

D'Escousse, Richmond county, is a thickly settled district on the northeastern coast of Madame island, and on the southern coast of the entrance to Lennox Passage, a strait separating the Isle Madame from Cape Breton Island, and connecting St. Peter's bay with the Strait of Canso.

A wharf, with warehouse on it, was constructed by the department during 1902-3, with the exception of a cribwork stone abutment, 15 feet in length, the wharf is a pile structure, extending to 12 feet at low water, 307 feet long and 22 feet wide, with an 'L' on the western side of the outer end, 22 by 22 feet; the bearing piles outside of the line of low water being of creosoted timber. The warehouse, which is 30 feet long and 20 feet wide, is constructed on a pile foundation on the eastern side of the inner end of the wharf.

During the winter of 1903-4, the ice lifted the inner 137 feet of the structure to a height of about 3 feet in the centre, and during 1904-5, the sum of \$900 was expended in constructing cribwork blocks under the damaged portion of the wharf, but

SESSIONAL PAPER No. 19

as the amount proved insufficient to complete the work, a further sum of \$149.40 was expended during the last fiscal year to accomplish the improvement.

DEVIL ISLAND.

Devil Island, Halifax county, is a small low island, about 2,000 feet in length by 1,000 wide, with its highest point about 15 feet above H.W.Q.S.T., situated about 8 miles to the southeast of the city of Halifax, and one-third of a mile from the mainland of Hartland Point, to which it is connected by a reef, covered with 3 feet of sand, and having 3 feet of water over it at low tide. The island is permanently inhabited by about 100 people, wholly dependent upon fishing for their livelihood.

In 1892, a breakwater, 300 feet in length, 15 feet in width, with an ell at the outer end, 30 feet in length, at which there is a depth of 5 feet at L.W.O.S.T., was constructed at a cost of \$1,941.18.

In September, 1893, the sum of \$87.96 was expended in close-sheathing 100 feet in length of the western or seaward face of the breakwater, in order to prevent the sea from washing the gravel from under the ballast floor, and obstructing the berths for boats on the eastern side.

In 1899-1900, the sum of \$97.13 was expended in petty repairs, rendered necessary by damage done by the severe storm of March 1, 1900.

In 1903-4, the sum of \$249.68 was expended in repairs and improvements. Of this sum, \$149.68 was expended in filling the spaces between the face-logs with new timber, rendered necessary by the eating away of the old timbers by the limnoria. The outer end was also reballasted. The remaining \$100 was expended in building a small wing or break on the western side of the shore end of the breakwater, to prevent the gravel from washing in past the shore end of the work. The new block is 35 feet long, 10 feet wide and 7 feet high, well and strongly built of round-log, crib-work, filled with stone.

In 1904-5, the sum of \$499.48 was expended in building a small breakwater on the northern point of the island, to prevent the sea from washing round and disturbing boats lying at or near the old breakwater, on the west side. The new work is 155 feet long, 15 feet wide and from 4 to 8 feet high, substantially built of round-log cribwork and filled with stone ballast.

On June 19, 1905, a contract was awarded to Messrs. Reid & Archibald, of Halifax, to construct a new breakwater, immediately to the west of the old work, which was so far eaten by both the teredo and the limnoria as to be in a dilapidated condition and of a very little further service. The work, to the level of half tide, is to be built of creosoted timber, which was furnished and delivered by the department.

During the fiscal year 1905-6, the work under contract was completed and repairs were made to a small breach on the seaward side of the ell. at the shore end of the work, which was made by the sea undermining this portion of the work.

Spring tides rise 6 feet, neaps, 5 feet. Total expenditure during 1905-6, \$6,427.88.

DIGBY.

Digby, Digby county, is the shire town of the county, with a population of about 1,500, beautifully situated on the southwestern end of Annapolis basin. It is an important station of the Dominion Atlantic Railway, 67 miles north of Yarmouth, 150 miles from Halifax, 20 miles from Annapolis. It is also the port of call for the daily steamer of the Dominion Atlantic Railway plying between Digby and St. John. The harbour is open at all seasons and well protected from nearly all quarters; storms, however, from the north and northeast drive a heavy sea against the pier, and if, at such times, there be much drift ice in the basin, the structure is likely to suffer damage.

The first pier was built by the government of Nova Scotia, some years before confederation, and was nearly destroyed by the gale which swept the Bay of Fundy in

6-7 EDWARD VII., A. 1907

1866-7. In 1869, to aid in rebuilding the work, the sum of \$2,920 was granted by parliament and transferred to be expended by the provincial government. The pier, as then built, was of pile-bents, 12 feet apart for 560 feet; next a block of cribwork, 80 feet long, 45 feet wide, the southern half of which sloped so as to form an incline, rendered necessary by the great rise and fall of the tide (24 feet at springs). The incline was finished by a block 170 feet long by 22 feet wide, the northern half of this portion of the pier being all pile-bents, 8 feet apart. The outer end of the pier consisted of a block, 56 feet long, 45 feet wide and about 40 feet high. The whole of the northern face was close-piled, the total length of the structure being 870 feet.

In 1872, the sum of \$1,650 was expended by the department in completing and repairing the pier. In 1874, a number of piles and braces were renewed, the outer block newly fendered, and new joists and planking laid for the total length. During the gale of February 22, 1879, a schooner loaded with produce for the West Indies, parted its cable and was swept bodily through the pier, carrying away a length of 130 feet, which was rebuilt at a cost of \$2,367.73.

In 1881-2, the sum of \$888.57 was expended in renewing a few piles and other timbers that had been eaten away by the limnoria. In December, 1885, the outer end of the pier was destroyed by a severe gale, and in 1885-6, the sum of \$1,945.62 was expended in repairs. In 1886-7, a further sum of \$767.62 was expended on the same repairs.

In 1887-8, the sum of \$7,467.68 was expended in the construction of a block 40 feet x 40 feet, on the site of the displaced outer block; of an inclined landing, 26 feet wide and 80 feet long between the new outer block and the undestroyed inner portion of the pier, and the building of a roadway on pile and frame bents, connecting the whole work with the new outer block. In January, 1888, operations were begun towards building the pier to its original length, and the departmental report for the year 1888-9 shows an expenditure of \$4,498.14. The new work consisted of a block 45 feet x 45 feet to replace the former one. It is built of round timber, with double sets of face-logs and is fully ballasted, it is 45 feet high and connected with the outer portions of the work by a cribwork inclined landing, over the top of which a deck wharf is carried on heavy frame bents. The inclined landing and its superstructure is 25 feet wide. The inshore or pilework section was strengthened and repaired in places, and parts of the worn and decayed planking were renewed. In 1889-90, heavy piles were driven along the northern and southern sides of the centre block, which was shifted and damaged by a storm in December, 1885, to prevent any further movement.

In 1890-1, and again in 1891-2, small expenditures were made in general repairs.

In 1890, a contract was entered into for the construction of a landing pier on a new site, namely, on the north side of the 'Racquet,' about a mile to the northward of the present pier, and the town of Digby. For this purpose a quantity of timber and iron had been secured by the contractor. Owing, however, to numerous delays, and the death of the contractor, the intention of building this new pier was abandoned, and it was decided instead to repair and reconstruct the present pier, utilizing, as much as possible, the timber and iron belonging to the estate of the deceased contractor. The work of reconstruction was carried out by days' labour at a cost of \$15,248.15.

In April, 1894, a length of 330 feet of close-piling along the north side of the pier, together with the caps and walings for the same distance and about 90 of the outside bearing and fender piles were destroyed by a violent gale. In order to save the rest of the structure from the scouring action of the under-tow set up by the sheet piling, the rest of it was immediately cut out and the sheet piling and other timber that had been knocked adrift, was saved and piled on the inner wharf. Subsequently, in May and June, 1894, the sum of \$1,410.03 was expended in making good the damage done by the April storm. The sheet piling, having proved a mistake, it was not replaced, but about 90 new heavy piles were driven and thoroughly braced and bolted.

In 1895-6, the sum of \$4,841.99 was applied in filling with substantial close-piled work, a space or recess on the north side of the pier, near its outer end, 210 feet long

SESSIONAL PAPER No. 19

by an average width of 17 feet, and in raising from 2 to 3 feet and renewing the entire floor of the outer 225 feet in length.

In 1896-7, the sum of \$3,132.89 was applied to the reconstruction of the southern half of the shore end of the pier for a length of 450 feet, in substantial pilework. The new work was covered with 6-inch plank and securely capped, fendered and braced. In the year 1898-9 the sum of \$579.80 was expended in the renewal and repair of the outer south corner of the pier, which was damaged by being struck by the Dominion Atlantic steamship *Prince Rupert*, during a southeast blow in April, 1899. In addition to this, 40 feet in length of the inclined slip was replanked with 6-inch plank, and a couple of new fenders were bolted into position.

In 1900-1, the sum of \$2,000 was expended in necessary renewals. The work done consisted of the replanking of the wide part of the inclined slip 125 feet long by 25 feet wide, the narrow part, 87 feet long by 17 feet wide, and a portion of the floor of the main wharf, 18 by 22 feet, with 6-inch spruce deals.

In addition to this, an open shed, 100 feet long by 33 feet 5 inches wide, was erected at the outer end of the present pier and office, and over the inclined slip to protect freight when landed from steamers.

In 1901-2, the sum of \$3,300 was expended in repairs and improvements. The old freight shed was removed 100 feet up the pier and raised 4 feet in height. Adjoining it outwardly there was built a new shed 202 feet long, the upper 100 feet in length being built with the floor on a level with a box car, and the lower 100 feet built level with the floor of the pier. A portion of the pier floor was also renewed. The arrangement is now more satisfactory and convenient for the handling of freight.

In 1902-3 the sum of \$3,697.77 was expended in rebuilding the lower 60 feet in length of the inclined slip. Owing to this portion of the work, which was of cribwork, being much injured by the limnoria, the new portion was built of pile-work, the piles being driven through the ballast cribs. It was difficult and expensive work. In addition to this, a considerable portion of 6-inch plank on the shoreward end of the pier was renewed, and a number of long hardwood fenders that had been broken by the daily steamer from St. John were renewed.

In 1903-4 the sum of \$318.15 was expended in renewing two hardwood fenders, building a stairway from the main dock to the inclined slip and putting new eaves-gutters, down-spouts and a few other petty and miscellaneous repairs to the freight shed.

In 1904-5 the sum of \$1,440.60 was expended in renewing a considerable portion of the 6-inch flooring, which was worn out under the steamer freight traffic.

In 1905-6 the sum of \$462.61 was expended in renewing a quantity of planking on the inclined slip and in repairing the roof of the freight shed.

The work was transferred to the control of the Department of Marine and Fisheries on June 12, 1888.

Spring tides rise 24 feet, neaps about 20 feet.

DRUM HEAD.

Drum Head, Guysborough county, is on the south or Atlantic coast of Nova Scotia, about two miles southeast of the entrance to Isaac's harbour.

A breakwater at this place, commenced in 1902-3 and completed in 1903-4, extends 330 feet in from $1\frac{1}{2}$ to 2 feet at low water. It is of cribwork, 16 feet in width on top, fully ballasted, close-fendered on the seaward side and at the outer end, and protected on the seaward side and at the outer end by a talus of stone, sloping 3 to 1 from high water. Spring tides rise 5 feet.

The appropriation for 1905-6 was for extending the breakwater to 10 feet at low water, to afford additional shelter for fishing boats and a landing place for coastal steamers.

A contract was entered into on the 4th of April, 1906, for an extension 149 feet in length and varying in width from 16 feet at the inner end to 20 feet at the outer

6-7 EDWARD VII., A. 1907

end, with an 'L' at the outer end, 30 by 20 feet, forming a 'head' 50 feet in length. Up to the end of the fiscal year works of construction had not been commenced. Expenditure during 1905-6, \$134.71.

EAST BERLIN.

East Berlin is a small fishing settlement, about 11 miles northeast of Liverpool town; population of about 350. During the year 1902-3 the sum of \$1,999.96 was expended on the construction of a breakwater, and in the succeeding year a further sum of \$692.93 was expended in completing the work. During the last fiscal year the sum of \$1,477.75 was expended in extending this work.

At the extreme eastern point of the village, and protecting partially the small harbour, is a shingle beach about 700 feet in length, which is bare at about half tide. The centre of this beach, laterally, was taken as the site of this work, and on this site a cribwork beach protection, or small breakwater, was constructed. This work was 600 feet long, 10 feet wide on top, with an average height of 9 feet. It is constructed of open-faced, round-log, stone-filled cribwork. This served its purpose, but an extension was required.

During the last fiscal year it was constructed, 190 feet in length, the first 70 feet being the same character of work as the former work, but the latter, or outside 120 feet, was constructed as combined wharf and breakwater, of solid continuous cribwork, properly fendered, covered and connected. This outside portion is 14 feet wide and has a height, at the outer end, of 16 feet, or a depth of 5 feet of water at L.W.O.S.T.

EAST CHEZZETCOOK.

East Chezzetcook, Halifax county, is a deep inlet, situated about twenty miles to the east of Halifax harbour. The inlet is surrounded by a population of some 300 or 400 people, engaged in fishing and farming. In 1904-5, the sum of \$3,993.26 was expended in the construction of a detached breakwater, for the purpose of forming a shelter for fishing boats and other craft. The work is 420 feet long, 14 feet wide, and from 6 to 8 feet high, substantially built of cribwork, and resting on a substructure of brush and stone, 20 feet wide and 2 feet thick.

During the fiscal year 1905-6, a further sum of \$4,000 was expended in completing this work. The completed work is 846 feet long, 8 to 16 feet high, and 16 feet wide, of cribwork, resting on mattresses of brush and stone.

Spring tides rise $6\frac{1}{2}$, neaps, $5\frac{1}{2}$ feet.

ECONOMY.

Economy, Colchester county, is situated on the north side of the Basin of Minas, seventeen miles west of Great Village and twenty-one miles east of Parrsboro.

A wharf was built by the department in 1887-8, 208 feet long and 25 feet wide, at a cost of \$2,500. In the summer of 1890, an extension was built, 100 feet long and 25 feet wide with an 'L' 25 feet long on the outer end, at a cost of \$2,500.

In the summer 1891, an extension was built, 100 feet long and the same width as the rest of the work, at a cost of \$2,200. In the autumn of 1891, a third extension was built, 55 feet in length, at a cost of \$1,000. The whole structure was substantially built of round-log cribwork, well ballasted and double fendered. Its average height is about 18 feet at the outer end. At H.W.O.S.T. there is about 16 feet of water.

In 1895-6, the sum of \$159.45 was expended in laying new plank flooring for 190 feet in length, on the shoreward portion, and putting in some new fenders on the outer block.

Owing to the mud flats in the cove, where the present wharf was built, gradually filling up with mud, this wharf has become useless owing to the reduced depth of water to be found at it, and in 1903-4, the sum of \$2,071.78 was expended in building

SESSIONAL PAPER No. 19

a new pile wharf at the mouth of the little creek or brook farther east than the old wharf 200 feet long, 25 feet wide, with an 'L' on the outer end giving a face length of 45 feet and a depth of water at H.W.O.S.T. of 16 feet.

In 1904-5, the sum of \$1,000 was expended in taking apart and rebuilding the pile-wharf built in the previous year, which was lifted by exceptionally heavy ice in the previous winter. In addition to this, two small pieces of cribwork, 70 feet long on the east side and 80 feet long on the west side of the shore end of the wharf, were built for the purpose of protecting the beach carrying the public road. Each piece of cribwork is 10 feet wide and from 6 to 8 feet high.

In 1905-6, the sum of \$400 was expended on close-piling the shoreward face and outer end of the work.

ESKASONI.

Eskasoni, Cape Breton county, is situated on the north-east side of East bay, an arm of the Great Bras d'Or lake, about seven miles east of Benacadie Point, at the entrance to the lake, and nine miles from the head of the bay.

The harbour, which is extensive and has a good depth of water, is formed by out-lying islands and connecting beaches.

On March 8, 1906, a contract was entered into with Thos. D. Morrison, in the sum of \$2,875, for the construction of a wharf off Bown's shore. The proposed wharf will extend 12 feet at low water and be 168 feet long and 20 feet wide, with an 'L' at the outer end, 20 by 20 feet; with the exception of a short crib-work shore abutment, it will be constructed on creosoted timber piles.

Up to the end of the fiscal year construction had not been commenced, but the necessary materials had been ordered.

The total expenditure during the last fiscal year amounted to \$183.78.

FELTZEN.

Feltzen South, Lunenburg county, is the name given to a large and prosperous fishing settlement situated on the west side of Lunenburg bay, about three miles southwest of the town of Lunenburg, with a population of about 600 people.

During the fiscal year 1905-6 the department expended the sum of \$2,454.06 in the construction of a pile timber wharf, 141 feet long and 25 feet wide, with an 'L' at the outer end giving a face length of 50 feet and a depth of water at L.W.O.S.T. of about 10 feet. The wharf is 18 feet high along the face. The approach, 60 feet long, is a bank of stone and gravel.

Spring tides rise 7 feet, neaps, 6 feet.

FINLAY POINT.

Finlay Point, Inverness county, is on the west coast of Cape Breton Island, three miles north of the entrance to Mabou harbour.

The work at this place, a wharf commenced in 1902-3 and completed in 1904-5, consists of cribwork, 15 feet in width on top, extending from low water, 146 feet to 3 feet at low water, and an approach of brush and stone, 170 feet in length, with a talus of quarried stone on its seaward side. Spring tides rise 4 feet.

During the fiscal year 1905-6, the sum of \$74.99 was expended in repairing and strengthening the brush and stone approach at its junction with the cribwork.

FREEPORT.

Freeport, Digby county, is situated on the southern end of Long Island, on the east side of Grand Passage, 40 miles southeast from Digby Gut and 25 miles southwest from Trout Cove. The population consists of about 700 people engaged chiefly in fishing and farming. The fishing fleet comprises about 15 schooners valued at nearly \$8,000 and 50 boats. About 250 men are employed in the fishing industry.

6-7 EDWARD VII., A. 1907

Freeport is also a port of call for subsidized steamers plying between Yarmouth, N.S., and St. John, N.B., but owing to the want of a proper landing pier, and to the prevalence of fog, in which it is not practicable to tranship freight and passengers into small boats, which was the only means of landing, the steamers were seldom able to stop, and in many cases, passengers and freight were carried through and landed on the return trip at the port from which they started.

To provide a much needed landing pier for local trade as well as to provide some measure of shelter for the fishing fleet, the department on June 22, 1905, awarded a contract in the sum of \$13,700 for the construction of a breakwater.

The work, which was satisfactorily completed on July 9, 1906, is a substantial structure of stone-filled cribwork, 251 feet long, 30 feet wide on top and from 14 feet at the inner end to 32 feet high at the outer end. The north or seaward side and the outer end are close sheathed, the north side being provided with a solid timber break 5 feet high; the lower portion of the work, from the bottom up to 8 feet above L.W. O.S.T., or up to a plane 17 feet below the floor, is wholly of creosoted timber as a protection against the limnoria. At the outer end of the work, at L.W.O.S.T. is a depth of about 6 feet of water. The shore end of the work is an approach 70 feet long of stone, the south side being walled up with a batter 1 in 12, like the cribwork, and the north side being formed of large rocks, laid with a slope of 1 in 2. On the south side of the work is an incline of 8 feet wide, running down 1 in 7 to the level of the platform, 6 feet above low water, for the convenience of boats and small craft. The work has proved of great benefit both to the fishing industry and the local trade.

The total expenditure during 1905-6, was \$13,923.92.

Spring tides rise about 21 feet.

FRUID'S POINT.

Fruid's Point is situated on the west side and near the head of Ragged Island bay, about $3\frac{1}{2}$ miles northeast of Lockeport. From Lockeport to Sable river, about 10 miles northeast of Lockeport, there is almost a continuous settlement practically without wharf facilities, and it was to accommodate these people that this work was constructed in the fiscal year 1903-4, at a cost of \$1,425.20.

It consisted of two parts: an approach and a wharf proper. The approach was constructed in the shape of a rock-bank, 105 feet long, 24 feet wide on top and 8 feet high at its outer end. The wharf proper was constructed of block and span, stone-filled, round-log cribwork, 120 feet long, 20 feet wide and with a height, at the outer end of 18 feet.

Owing to the fact that the Halifax and Southwestern Railway Company have made this a station and that the people for several miles radius will have to call here, it was considered necessary that this wharf should be enlarged. The old wharf was widened to twice its former width and the same class of construction adopted. The extension of the wharf was thought possible by means of pile-trestle bents, but it has since been found impossible to drive the piles owing to the prevalence of rocks, about 2 feet from the surface; therefore the style of construction was changed to cribwork with spans intervening. The length of the proposed extension, owing to the prevalence of these rocks, will also have to be lengthened from 200 to 264 feet. The amount expended last year was \$5,000. Spring tides rise here 6 feet, neaps $4\frac{1}{2}$ feet.

GABARUS BREAKWATER.

Gabarus bay, Cape Breton county, is on the Atlantic coast of Cape Breton island, and is five miles wide at the entrance, between White Point and Cape Gabarus.

In 1901-2, a breakwater, extending 190 feet to $12\frac{1}{2}$ feet at low water, was constructed at Harbour point, near the head of the bay. The inner section, 70 feet in length, is 16 feet in width, and the outer section, 120 feet in length, is 24 feet wide on top. The inner section is constructed of native round timber cribwork, and the outer section of squared timber, close-faced, with creosoted timber substructure.

SESSIONAL PAPER No. 19

A contract was entered into May 4, 1905, for the construction of an extension to the breakwater, 128 feet in length to 17½ feet at low water, for the sum of \$19,909, to consist of an inner section 47½ feet long and 24 feet wide on top, and an outer section, 80½ feet long and 30 feet wide on top; built of square timber, laid close-faced, with ties of round timber and with creosoted substructure, fully ballasted and fendered, and close-sheathed on the seaward face at the outer end, and on the inner face for a distance of 15½ feet from the outer end.

Spring tides rise 5 feet.

The work of construction on the extension was commenced August 24, and completed on December 31, 1905.

The total expenditure incurred during the last fiscal year amounts to \$19,381.02.

Gabarus harbour, Cape Breton County, on the eastern side and near the head of Gabarus bay, is of limited area but of great value to the fishermen.

Expenditures were made in 1873-4 and 1880-1 in deepening the entrance, through rock, to about 1 foot at extreme low water.

In 1901-5, the sum of \$1,584.91 was expended in opening a new channel, through rock, clay and boulders, 25 feet in width and from 2½ to 3½ feet in depth at low water, to the westward of the former entrance, with the intention of obtaining, ultimately, a uniform depth of 3½ feet at low water and a width of 30 feet at the bottom.

During the fiscal year 1905-6, the sum of \$2,960.77 was expended in completing the new channel and in constructing part of a proposed brush and stone retaining wall within the harbour, to prevent shoaling by sand carried across an extensive beach forming its eastern side.

The work performed included opening a trench 342 feet in length, 15 feet in width at bottom, and 5 feet in average height (extreme low water to extreme high water level), and constructing in it a work of brush and stone, 12 feet wide on top and 6½ feet in average height (extreme low water to 1½ feet above extreme high water).

GEORGEVILLE.

Georgeville, Antigonish county, is on the southern shore of Northumberland strait, 6½ miles southwest from Cape George.

A wharf was constructed in 1892-3, to afford the inhabitants shipping and landing facilities. It was 207 feet in length and 20 feet wide, with an 'L' 20 by 20 feet, on the eastern side of the outer end; but during 1896-7-8, an extension, 44 feet in length, 40 feet in width, with an 'L,' 20 feet by 24 feet, was added thereto, making a total length of 251 feet, 20 feet wide, for a distance of 187 feet, 40 feet wide for a distance of 40 feet, and 60 feet wide for the remaining distance of 24 feet. The inner end of the wharf for a distance of 87 feet, was of stone, covered with plank, and the remainder of the work of squared timber cribwork, protected by sheathing and fenders. The depth of water at the outer end at low water, is 7 feet.

During the severe northwest gale of September 12, 1900, which caused so much damage in the Gulf of St. Lawrence, the woodwork on the stone approach was partly lifted by the sea and removed several feet; the sum of \$291.23 was expended in putting it back into position, but it was shortly after again disturbed by the sea during a heavy gale.

During 1901-2, the sum of \$699.47 was expended in removing and taking apart the woodwork on the top of the stone approach; the stone wall was taken down to a depth of 4 feet, and in its place, cribwork was substituted, fully ballasted and covered with the old plank, and the outer faces of both cribwork and stone wall were close-sheathed.

The sum of \$2,500 was voted for expenditure during 1903-4, towards the extension of the wharf, 50 feet in length and 25 feet wide, with an 'L,' 40 by 25 feet, on the western side of the outer end.

The authority for the expenditure of the amount was received on November 14, too late in the season to commence work of construction, but plans and specification for the work were prepared, the necessary materials were procured during the winter

6-7 EDWARD VII., A. 1907

and spring, and all was ready to commence construction at the end of the fiscal year; and out of the amount voted the sum of \$2,499.70 was expended during the year.

The sum of \$2,000 was voted for expenditure during 1904-5, for the construction of the extension, the materials for which were procured during 1903-4.

The substructure was constructed in two separate blocks, one for the extension proper, the other for the 'L.' The first was successfully placed in position and secured, and the second was also placed in position, but, before it could be sufficiently ballasted it was disturbed by a gale and moved several feet away from the other. Steps were at once taken to refloat it back into position, but before this could be accomplished, a second gale removed it still farther to the westward. Owing to the lateness of the season, orders were given to complete the extension, independently of the 'L,' and to haul the wrecked block ashore and save the materials in it. The extension block was completed, the wrecked block was brought ashore, taken apart, and the materials were saved and secured, and in doing so the appropriation became exhausted.

The sum of \$3,600 was appropriated for expenditure during 1905-6, for the construction of an extension to the wharf, 48 feet long and 24 feet wide, and for which most of the materials were on hand; for the construction of an 'L' 40 feet long and 24 feet wide, on the western side of the extension, and for the improvement of the road connecting the wharf with the public road.

The road was improved at a cost of \$299.81, the extension was completed, but owing to stormy weather and the loss of some materials, the cost of doing so amounted to \$2,199.36, or about \$1,200 more than estimated, and the balance of the amount voted, viz., \$1,100.83, was expended during the winter in obtaining most of the materials required for the extension.

GOOSE BAY.

Goose Bay, Yarmouth county, is situated on the west side of the neck of land or peninsula known as Tusket Wedge, about 12 miles southeast from the town of Yarmouth. The population of the district of Tusket Wedge, within a radius of about two miles, is about a thousand people, engaged in fishing and farming.

For the benefit of local trade, the department, in 1905-6, expended the sum of \$2,599.68 in constructing a public wharf of pile work, 120 feet long, 20 feet wide and about 14 feet high at the outer end. The approach is a stone embankment, 70 feet long and from 3 to 7 feet high. At the close of the fiscal year this work was not quite finished.

GRAND ETANG.

Grand Etang is situated on the Gulf of St. Lawrence, about midway between the harbours of Margaree and Cheticamp.

The opening of a channel through a beach which separated the waters of the gulf from a large and deep fresh water pond and the construction of channel protection works, to make the pond available for fishing boats and small vessels, necessitated the diversion of the highway and the construction, in 1905-6, of a bridge across the pond, 500 feet above the former crossing.

The bridge, which was reconstructed in 1901-2 and 1902-3, with creosoted piling, is 563 feet in length, including the east and west approaches of brush and stone with cribwork abutments, respectively 74 and 51 feet in length and 438 feet of pile work; it is provided with a hand-rail on each side, an opening for boats and a draw. The depth at extreme low water over the central 200 feet is 6 feet, and to firm bottom, through water and soft mud, 21 to 24 feet.

During the fiscal year 1905-6 the sum of \$478.65 was expended in bringing the stringers and covering over the pile bents at each end (which had been raised by ice) to their original level, and in placing brush and stone between the pile bents at each end to prevent further damage.

SESSIONAL PAPER No. 19

GRAND NARROWS.

Grand Narrows, Cape Breton county, is on the southeastern side of the Barra strait, which connects the Great with the Little Bras d'Or lake. It is an important station on the Intercolonial Railway at the southern end of the railway bridge which spans the strait at this place, and is also a landing place for steamers, which call twice a day with mails and passengers for and from Baddeck, and make connection with the express trains going east and west.

The old wharf was 287 feet in length, including 67 feet of cribwork, filled with brush and stone and covered with gravel; 80 feet of pile work built in 1885-6 by the department over the remains of an old landing pier built by the provincial government; and an extension of 140 feet in length, built by the department in 1883-4. The extension consisted of three blocks, each 20 by 20 feet, and an outer block or head, 20 feet in line of work and 60 feet in length, with openings between them of about 16 feet.

Repairs were made upon the structure from time to time, but as, owing to natural decay and the ravages of the teredo, it fell eventually into a dangerous condition, it was decided to reconstruct it with creosoted timber piling.

During the year 1901-2 the sum of \$1,711.50 was expended in procuring the largest portion of the materials required in the reconstruction of the wharf, including the creosoted piling.

During 1902-3 the sum of \$1,300.66 was expended in reconstructing the work with pile work to the end of the old work and 10 feet beyond; the work being 297 feet in length, 24 feet wide for a distance of 277 feet and 30 feet wide for the remaining distance of 20 feet; and having a depth of 11 feet at low water at the outer end.

In order to render the wharf accessible to steamers of a greater draught the sum of \$3,500 voted for expenditure during 1903-4 towards the extension of the wharf to 15 feet at low water, a distance of 57½ feet on the centre line, and the construction of an 'L' 30 by 30 feet on the southern side of the outer end.

Plans and specifications for the proposed pile-work were prepared, all the necessary materials were obtained, but as the creosoted timber required was not delivered until the latter part of June, construction could not be commenced by the end of the fiscal year, and out of the amount voted the sum of \$2,466.37 only was expended.

During the fiscal year 1904-5 the sum of \$1,435.49 was expended in the construction of the pile-extension for which the materials were procured during the previous year.

The sum of \$964.44 was expended during 1905-6 in the removal by diver of the remains of old work which projected beyond the southern face of the new pile-work; in the construction of a freight shed on the wharf, 12 by 25 feet, and in repairing and strengthening the south-west corner of the 'L,' which had been damaged by a steamer.

GROVE POINT.

Grove or Monday Point, Cape Breton county, is on the southern side of Boularderie island, about 3¼ miles southwest from the bridge across the entrance to the Little Bras d'Or channel.

A wharf was constructed here by the department during 1893-4-5, consisting of a stone embankment 122 feet long, with gravel covering, of an open span, 16 feet long, and of a native round timber cribwork block, 22 by 44 feet, at the outer end forming a T.

The sum of \$500 was voted for expenditure during 1905-6 in repairing the wharf, but as an examination made of the work showed that the bottom of the cribwork block, below the line of low water, was completely destroyed by the teredo, and the amount granted was entirely too small to reconstruct it, the amount has not been expended.

6-7 EDWARD VII., A. 1907

HALF ISLAND COVE.

Half Island Cove, Guysboro county, is situated on the southern shore of Chedabucto bay, about 18 miles to the eastward of the town of Guysboro, and 12 miles to the westward of Canso harbour.

The sum of \$7,500 was appropriated for expenditure during 1905-6 on the construction of a breakwater.

On April 25 a contract was entered into with Messrs. Suttis and Anderson for the construction of the work in the sum of \$6,727, but up to the end of the fiscal year the work had not been commenced.

The work under contract will extend to 9 feet at low water and be 270 feet in length, and, with the exception of the approach, 30 feet in length, which is to be of stone, the structure is to be of round native timber cribwork, close-sheathed on the seaward face and around the end and protected on the seaward side by a stone talus.

The expenditure during the fiscal year ended 30th June amounts to \$182.95.

HALL'S HARBOUR.

Hall's Harbour, King's county, is situated on the south side of the Bay of Fundy, about 65 miles northeast from Digby Gut, and 12 miles southwest of Scott's Bay; it is about 12 miles northwest from Kentville, the county town of King's, and the headquarters of the Dominion Atlantic Railway.

The harbour, though small, is one of the best, at high water, between Scott's Bay and Digby Gut. Spring tides rise 39 feet, neaps 33. The village has a population of some 20 families, and some years ago had a considerable shipping trade, which, however, of late years has dwindled to insignificant proportions.

About the year 1839, the inhabitants, aided by the provincial government, built timber retaining walls on both sides of the harbour, which consists of a land-locked basin, dry at low water, of about an acre in extent, to permit vessels to lie alongside the public road. About 1844, an addition seawards to the wall, on the west side, was built, in order to check the accumulation of gravel at the mouth of the harbour and to serve as a breakwater. About 1885, an addition of 100 feet in length was built to this breakwater at a cost of \$2,000. In 1884, it was repaired by the department at a cost of \$750. On November 6, 1884, the outer block was destroyed by a violent gale, the accompanying heavy seas having also the effect of depositing a bank of gravel, which almost entirely obstructed the mouth of the harbour.

Between 1884 and 1891, the only expenditure made upon the work was the sum of \$49.97, applied in sheathing the exposed and broken ends. In 1891, the sum of \$500 was spent in rebuilding the face of the timber retaining wall on the eastern side of the harbour, 270 feet long. In November, 1893, the sum of \$100.08 was spent in a few much needed repairs to the breakwater, on the west side. In 1895-6, the sum of \$450.83 was expended in repairs to the breakwater on the west side, and the south or shoreward end was raised from 2 to 5 feet, the whole top, 102 feet in length, was relaid with new 6-inch flatted spars and new floor stringers. Twenty-six new fenders were placed, a new piece of break was built on the north side of the shoreward end, 30 feet long, 5 feet high and 5 feet wide; the shore end was also filled with ballast and levelled up with gravel.

During the year 1898-9, the sum of \$191.68 was expended in repairing the old breakwater, the work done consisting of the close-sheathing of several weak spots on both the outer and inner sides, the renewal of a considerable portion of the floor, and the placing of a number of new fenders and mooring posts.

In 1899-1900, the breakwater was extended 120 feet at a cost, by contract, of \$3,300. The new work is 26 feet wide on top, from 14 to 20 feet high, substantially built of round-log, stone-filled cribwork of the usual type, battering 1 in 6 and close-sheathed vertically on the outer side, and battering 1 in 12 on the inner side. The outer end is also close-sheathed, and along the seaward face is a break 4 feet, 6 inches high.

SESSIONAL PAPER No. 19

In 1904-5, the sum of \$1,140.52 was expended in beginning the construction of a dam and sluice immediately above the public road bridge, at the head of the little harbour. The object of this is to afford a means of scouring away the gravel that accumulates alongside the breakwater and obstructs the entrance of schooners.

In 1905-6, the sum of \$2,500 was expended in completing the dam and the sluice, immediately above the public road approach, at the head of the little harbour, which was begun in 1904-5. The dam, which is 220 feet long over all and has a maximum height of 18 feet, is built of puddle formed of an excellent clay found in the immediate vicinity, mixed with from 15 to 25 per cent of fine beach gravel. The sluice-way, which is at about the middle of the length of the dam, is about 70 feet long, substantially built of squared timber, with an opening of 9 feet in width, containing two gates each 4 feet 6 inches high, and 3 feet wide, operated by a pair of winches, situated on the floor of the sluice at the level of the roadway. The dam carries the public road, the ancient highway bridge immediately below being thoroughly dilapidated. This work has proved eminently successful in accomplishing the object of its construction, viz., the scouring away of the gravel from alongside the breakwater wharf.

The breakwater was transferred to the control of the Department of Marine and Fisheries, June 12, 1888.

HILTZ NARROWS.

Hiltz Narrows, Lunenburg county, forms the entrance to a small cove, about 150 acres in extent, situated on the west side of Mahone Bay, six miles southwest from Chester and four miles northeast from the village of Mahone.

In 1875-6 the Nova Scotian government built a piece of cribwork wharfing, 270 feet long, 8 feet wide and with an average height of 7 feet, at a cost of \$331.55, the residents of the neighbourhood furnishing some free labour. The object of the work was to enable boats to pass in at ebb, and out at flood tides, during which times there is a very strong current through the Narrows. Several small amounts have been spent by the department in making repairs.

The work having fallen into a dilapidated condition, the department in the fiscal year 1905-6, expended the sum of \$1,000.04 in commencing a block of cribwork on the opposite side of the Narrows, which, when completed, will be about 150 feet in length, 12 feet wide on top and about 8 feet high.

Spring tides rise about 7 feet, neaps, 6 feet.

HUNT'S POINT.

Hunt's Point is a small fishing settlement, two miles northwest of White Point, and seven miles from Liverpool town. Population about 300.

The only harbour at this place is a small cove, primarily protected by a beach, which in turn was protected by a blocking about 35 feet long and 30 feet wide, built by the provincial government prior to confederation. This being inadequate for protection purposes, the department, in 1899-1900, constructed a small breakwater, supplemented by a beach protection. The breakwater was 120 feet long, 12 feet wide on top and 12 feet high at the outer end. The beach protection was 130 feet in length, with an average height of 5 feet and a width of 6 feet on top. The breakwater was constructed of continuous, stone-filled cribwork, sheathed on the outside with hewn timber, 5½ inches thick. The beach protection was constructed of open-faced solid cribwork. In 1902-3, the old blocking was renewed and a break 2½ feet in height was added to the new breakwater.

During the last fiscal year, the sum of \$997.86 was expended in extending this work. The extension is built of stone and concrete, it was not completed on the 30th June, 1906.

6-7 EDWARD VII., A. 1907

INDIAN HARBOUR.

Indian harbour, Halifax county, is a small fishing village of some 200 or 300 people, situated twenty-nine miles west of Halifax by public road, or about sixteen in an air line. It is on the east side of the mouth of St. Margaret's Bay, eight miles south of French Village.

In 1904-5, the sum of \$1,066.16 was expended in constructing a public wharf for the convenience of local trade and fishing. The wharf is constructed of block and span, the blocks being of substantial cribwork, filled with stone and well fendered. It is 20 feet wide, with an 'L' at the outer end, giving a face length of 50 feet, along which the work is 17 feet high and with a depth of water of 13 feet at H.W.O.S.T. The approach to the wharf consists of an embankment of stone and earth, 150 feet long and from 3 to 5 feet high. At the end of the fiscal year the work was not quite completed.

During the fiscal year 1905-6, the work was completed at a cost of \$765.38. Spring tides rise 6 feet; neaps 5 feet.

IONA (NEW WHARF).

Iona, Victoria county, is on the northern side of Barra Strait, which connects the Great with the little Bras d'Or lakes and is a station on the Intercolonial Railway, and a landing place for the steamer carrying mails and passengers to and from Baddeck, connecting twice a day with the express trains going east and west.

The new wharf, so called to distinguish it from the old one on the western side of the railroad bridge, was constructed by the department during 1902, and extended during 1904. It is a block and span structure, 400 feet long, 20 feet wide for a distance of 138 feet, and 30 feet wide for the remaining 262 feet, built of round timber with creosoted timber substructure, and close-sheathed on the seaward faces and outer end. The wharf extends to 11 feet at low water, and is connected with the railway station by a road 350 feet long.

All freight by rail for Baddeck, which is the distributing centre for the trade of the county of Victoria, is shipped via Iona, thence to its destination by steamer *Blue Hill*. For the accommodation of this freight, it was decided to construct a warehouse on the wharf, and for that purpose the sum of \$900 was appropriated for expenditure during 1905-6.

The warehouse, 40 feet long and 20 feet wide, resting on a creosoted timber pile foundation on the southern side of the inner end of the wharf, was completed, with the exception of the second flooring, the wainscoating and the outside painting.

The expenditure during 1905-6, amounts to \$899.90.

OLD WHARF.

The 'Old Wharf,' so called to distinguish it from the new wharf on the eastern side of the railway bridge, was originally built by the provincial government, but was acquired by the department, by which it was repaired, reconstructed and extended.

The work is 195 feet in length, on the western face, and consists of an approach 129 feet long and 20 feet wide, of a span 24 feet long, and of a 'head' 42 feet wide on the western and 22 feet on the eastern end, and 70 feet long on the channel face. The approach is constructed of close-faced square timber cribwork, partly covered with gravel and partly planked over, and the head is built on creosoted timber piling.

The sum of \$600 was voted for expenditure during 1905-6, for repairing the approach and for replacing the fender piles around the 'head,' which being of hardwood were destroyed by the teredo below the line of low water; but owing to the non-delivery of the creosoted timber piling, out of the amount voted, the sum of \$100.31 only, was expended up to June 30, in repairs to the side walls and to the top of the approach.

SESSIONAL PAPER No. 19

IRISH COVE.

Irish Cove, Cape Breton county, is on the southeastern shore of the Great Bras d'Or lake, near the entrance to East bay. The distance to the head of East bay is 20 miles, to St. Peter's canal about 22 miles, and, across the lake, to Grand Narrows, 10 miles.

The wharf at this place, completed in 1892-3, is 161 feet in length and 20 feet in width, including a shore block 47 feet in length, a central block 20 feet 4 inches in length, and an outer block 57 feet in length, with an 'L' 20 by 20 feet. It was strongly constructed, fully ballasted and had exposed faces of the outer and central blocks protected by close-piling. In 1898-9, 1900-1 and 1902-3, part of the close piling of the outer block, which had been damaged by the teredo, was renewed and some other repairs effected. In 1904-5, the sum of \$999.98 was expended in completing the renewal of the close-piling of the outer block, in renewing the close-piling on three sides of the central block, and in the guard-rails at the outer end and western side of the outer block and at the western side of the central block.

During the fiscal year 1905-6, the sum of \$799.97 was expended in removing the guard-rails, covering and floor-stringers of the wharf, in replacing them after raising the outer and central blocks and the outer end of the inner block two feet, and in placing 95 cubic yards of ballast in the raised work.

JANVRIN'S ISLAND.

Janvrin's Island, Richmond county, is a large island to the westward of Madame Island, from which it is separated by Mousselier's passage.

The sum of \$2,000 was voted for expenditure during 1904-5, towards the construction of a native timber block and span wharf on the northern side of Janvrin's harbour, 195 feet in length and 16 feet wide, and extending to 8 feet at low water; on completion of the expenditure in the autumn of 1904, all the cribwork blocks were built up to the required height and ready for the floor-stringers, excepting the outer block, which was built up to within 4 feet of the top.

A further sum of \$600 was voted for expenditure during 1905-6, to complete the work, but owing to heavy damage to the outer block, by ice, during the previous winter, the amount proved insufficient to finish it. The fendering, capping and the sheathing and some ballasting remains to be done, but the required materials are on hand and have been paid for.

The total expenditure during the last fiscal year amounted to \$599.37.

JEDDORE OYSTER POND.

Jeddore Oyster Pond, Halifax county, is the name given to a settlement of 400 people, situated at the head of Jeddore harbour. The principal industries are farming and lumbering.

During the fiscal year 1905-6, the department expended the sum of \$1,185.11 in the construction of a block and span wharf, 114 feet long, comprising a stone work approach, 35 feet long, 20 feet wide and 8 feet high; 3 spans of 13 feet each, and 3 blocks of substantial cribwork, two of them 11 by 20 feet, and the outer one 21 by 21 feet, at the face of which there is 12 feet of water at L.W.O.S.T.

Spring tides rise 7 feet, neaps, 5½ feet.

JERSEY COVE.

Jersey or Eel Cove, Victoria county, is situated on the northeastern end of St. Ann's harbour, in the angle formed between the beach at its entrance and the mainland.

The sum of \$3,000 was voted for expenditure during 1905-6, towards the construction of a wharf at this place. Instructions were given to prepare plan and specifica-

6-7. EDWARD VII., A. 1907

tions for the same, a thorough survey to decide as to which site offered the best facilities, and was best adapted to meet the requirements of the locality, the plan and specifications for the proposed work could not be prepared and submitted to the department until January 6, 1906.

The work proposed is a block and span wharf, with creosoted timber substructure, extending to 10 feet at low water, 183 feet in length and 20 feet wide, with an 'L' on the northeastern side of the outer end, 10 feet long and 20 feet wide; connected with the public road by an approach 105 feet long and 16 feet wide, consisting partly of block and span work and partly of clay embankment and grading.

Up to the end of the fiscal year, the work had not been let.

The amount expended on survey, preparation of plan, specifications, &c., is \$52,63.

JOGGINS.

The Joggins, Cumberland county, is a small port or village of about 800 or 900 people, situate on the southeast side of Chignecto channel, the northern arm of the Bay of Fundy. It is about 10 miles from the head of Cumberland basin and 14 miles from Maccan station, on the Intercolonial Railway, with which it is connected by the Canada Coals and Railway line.

During the year 1896-7, this department constructed a combined breakwater and wharf at this place, a description of which was given then. The depth at H.W.O.S.T., along the inner face of this breakwater is from 18 to 26 feet.

This breakwater has been much used by the local people, but hitherto they have been unable to approach it, except at low tide, as there was no road to it and it was situated at the foot of a precipitous bank, about 80 feet high, and it therefore could only be approached from the flats, thus causing those using it to travel a roundabout course of about $\frac{3}{4}$ mile, and then only at certain restricted hours of the day. To ameliorate these conditions the department appropriated the sum of \$3,000, and during the last fiscal year, the sum of \$2,999.81 was expended and an additional sum of \$1,000 has been appropriated for the present year and is now being expended on completion of work.

KELLEY'S COVE.

Kelley's Cove, Yarmouth county, lies about two and a half miles south of the present town of Yarmouth. Fifty to a hundred years ago, it was the harbour of the place and round its shores was all that then constituted the town. At the present date it is merely a shelter for about a dozen fishing boats, and there are but few houses in its immediate vicinity.

The present breakwater-wharf, built before confederation by the provincial government, is old and good deal decayed, though the bottom timbers are still sound. It is 97 feet long, $23\frac{1}{2}$ feet wide and $15\frac{1}{2}$ feet high at the outer end, where at high water ordinary spring tides there is about 12 feet of water. The work is of ordinary round-log, stone-filled cribwork and not floored. Immediately to the southwest of the wharf is a piece of cribwork, built to protect the beach, 118 feet long, 4 feet high and about 8 feet wide and of which the 30 feet next the wharf has been destroyed by waves.

During the year ended June 30, 1898, the sum of \$299.72 was expended in partially rebuilding the top of the breakwater wharf, and in the renewal and repair of 100 feet in length of the beach protection work adjoining the wharf.

For the protection of the fishing fleet, the department, on March 27, 1906, awarded a contract in the sum of \$7,700 for the construction of a breakwater.

Work was begun about July 1, 1906.

The expenditure during the last fiscal year amounted to \$1,008.81.

SESSIONAL PAPER No. 19

KINGSPORT.

Kingsport, King's county, formerly known as Oak Point, is a village of some 500 people on the south-west side of the basin of Minas, between the mouth of the Cornwallis river and Cape Blomidon. It is the terminus of the Cornwallis Valley Railway running to Kentville, the county town, fourteen miles to the south.

A pier, 445 feet in length, built on piles, stood here when the harbour was taken in charge by the Department of Public Works. In 1873-4 the department built cribwork, 12 feet wide, on the eastern or exposed side of the wharf for the purpose of breaking the force of the sea. In 1875 the work was extended a length of 240 feet, by a width of 30 feet, in order to increase the sheltered area and afford earlier access to roadstead in lee of the pier, which, owing to the great range of tide, was dry between half ebb and half flood. In subsequent years repairs were several times made. In December, 1890, the Cornwallis Valley Railway was opened for public traffic, and about the same time the wharf, which forms the terminus of the railway, and on which is a track, was leased by the department to the railway company.

During the fiscal year 1901-2 the sum of \$9,276.72 was expended in rebuilding the upper half of the outer block of cribwork, 270 feet long, which was built in 1875. A widening or re-enforcing block, 10 feet wide, was also built on the north side of the whole length of this outer portion.

In 1902-3 the sum of \$4,934.60 was expended in continuing the repairs and renewals to the work begun the previous year. The outer 130 feet in length of the work was taken down a height of 15 feet and rebuilt in substantial cribwork. On the north side of the pier, for its whole length of its 700 feet, a re-enforcing block, 10 feet wide, was partly built.

In 1903-4 the sum of \$5,052.61 was expended in continuing repairs and renewals carried on during previous years.

In 1905-6 the sum of \$459.50 was expended in rebuilding the cribwork that protected the public road approach from the beach to the shore end of the pier. The work consists of a piece of substantial cribwork, 103 feet long, 7 feet wide and from 4½ to 7 feet high.

LABILLE'S POINT.

Labille's Point, Richmond county, is on the eastern side of the entrance to Shaw's Cove, which is situated on the southern coast of Cape Breton Island, about 7 miles to the southeastward of the southern entrance to the St. Peter's canal, and one mile to the westward of L'Ardoise breakwater.

Shaw's Cove is very shoal, but it accommodates a large number of fishing boats, its eastern shore being the best protected from the sea is used as a landing place.

As it was found that Labille's Point was wearing away by the action of the sea, and the undertow sweeping around it made the landing at time dangerous, during 1900-1 the sum of \$485.44 was expended in the construction of a small breakwater off the point, 50 feet long and 12 feet wide, extending to low water, and consisting of round native timber cribwork filled in solid with stone.

During the fiscal year ended June 30, 1906, the sum of \$498.20 was expended in extending the breakwater a distance of 40 feet, and constructed in the same manner as the old portion.

The improvement has proved effective in checking the undertow and the landing place is now secure.

L'ARDOISE.

L'Ardoise, Richmond county, is situated on the eastern side of St. Peter's bay, near its entrance from the Atlantic ocean, and about nine miles east from the southern entrance to St. Peter's canal.

6-7 EDWARD VII., A. 1907

An isolated breakwater, built off Martin's point, in from 5 to 10 feet at low water, in 1876-7, and almost destroyed in 1883; was reconstructed during 1891-2-3.

The work consists of a timber core, 400 feet long and 20 feet wide, placed over the remains of the original structure in from 1 to 4½ feet at low water; the whole being covered with stone, sloping 3 to 1 on the seaward side and outer end, and 2 to 1 on the inner side and inner end. The whole surface of the work, above low water mark, was covered with stone of not less than 15 cubic feet capacity each, and the spaces between the stones above the line of high water were filled in with concrete.

Since the completion of the work the covering stones on the seaward and outer end slopes, which had been disturbed by the sea, have been replaced, and a concrete wall, 3 feet wide on top, and 4½ feet in height, with top flush with the surface of the covering, has been constructed over the outer face and the ends of the cribwork core.

The breakwater averages 17½ feet in height, from the original bottom up to the top of the stone covering, which is 5 feet above high water and 10 feet above low water springs.

In order to stop the undertow from sweeping into the harbour, through the gap between the inner end of the breakwater and the shore to the eastward of it, a distance of 1,195 feet, on December 29, 1903, a contract was entered into in the sum of \$24,880 for closing the gap by cribwork. The work was commenced on July 1, 1904, and completed on August 12, 1905, and consists of a native timber structure 1,145 feet in length and of a stone embankment 50 feet long to connect it with the old work. The cribwork, for a distance of 350 feet from the outer end, is 20 feet wide on top and protected by a stone talus on each side, and for a distance of 795 feet it is 16 feet wide on top and protected by a stone talus on the seaward side. The stone embankment, between the outer end of the cribwork and the old breakwater, is built with large quarried stone, sloping 3 to 1 on the outer and 2 to 1 on the inner side.

Since 1900, when the breakwater was last repaired, slight disturbances of the stone covering have taken place yearly, and in the winter of 1904-5 the work was visited by a very heavy gale, during which the heavy seas threw large masses of ice on to and against the structure, dislodging the stone and cutting several gaps through the top. On October 30, 1905, instructions were received to expend the sum of \$500 in urgent repairs, and on November 4 a foreman was appointed to carry on the work, but owing to the lateness of the season and to stormy weather, he was not able to accomplish much before he had to abandon the work for the winter. In May, 1906, operations were resumed, and the urgent repairs, consisting in closing up the worst gaps, were effected at a total cost of \$491.49.

The total expenditure during the last fiscal year, including work under contract, amounted to \$7,203.99.

LARRY'S RIVER.

Larry's River, Guysboro' county, is at the western extremity of Tor bay, on the southern or Atlantic coast of Nova Scotia, 24 miles to the westward of Canso harbour.

The harbour, a channel through mud flats improved by dredging, was formerly protected from the eastward by a beach and bar of shingle. Since 1896 the point of the beach at the northern extremity of the bar and the bar itself have been lowered and carried inward toward the channel.

A contract, entered into in September, 1902, for the construction of a breakwater, to restore the shelter formerly afforded by the beach and bar, was completed in July, 1904. The breakwater consists of two sections of stone embankment, respectively 125 and 379 feet in length, each 14 feet in width at the level of 2 feet above high water and 6 feet in average height; a central section of cribwork, 500 feet in length, 14 feet in width on top and 11½ feet in average height, protected on the seaward side by close-fendering and by a talus of stone sloping 2 to 1 from high water. The embankment and cribwork were finished at a height of 4 feet above extreme high water. Spring tides rise 6½ feet.

SESSIONAL PAPER No. 19

In 1904-5 the sum of \$1,207.52 was expended in procuring all the materials, with the exception of the stone and of the floor stringers and cap-timbers (guard rails), required in the construction of a 'spur' on the southwestern side and near the outer end of the breakwater, 125 feet in length, including 20 feet of stone embankment and 104 feet of cribwork fully ballasted and close-fendered on the seaward side and at the outer end.

During the fiscal year 1905-6 the sum of \$1,490.93 was expended in constructing about one-third of the embankment, in completing the cribwork, with the exception of procuring and placing the floor-stringers and cap-timbers, and of placing the covering and part of the upper fenders and sheathing. In addition to the above, repairs were made to the stone embankment, at the outer end of the breakwater, at a cost of \$99.32.

LITCHFIELD.

Litchfield, Annapolis county, is a fishing and farming settlement, with a population within a radius of a mile of about 150 people, situated on the south coast of the Bay of Fundy, fourteen miles northeast from Digby Gut.

In 1904-5, the sum of \$3,000 was expended in constructing a breakwater for the protection of the fishing fleet. The work, which the appropriation did not suffice to completely finish, is 170 feet long, from 20 to 25 feet wide and from 8 to 15 feet high, substantially built of round-log cribwork, filled with stone and close-sheathed on the seaward side and outer end. The seaward side is provided with a break four feet six inches high.

In 1905-6, the sum of \$999.30 was expended in completing the breakwater, which had been nearly completed in 1904-5, and in under-pinning the shore end of the work, which had been undermined by an unusual freshet in the stream issuing alongside.

Spring tides rise about 30 feet.

LITTLE BROOK.

Little Brook, Digby county, is situated on the thickly settled east shore of St. Mary's bay, Bay of Fundy, two and a half miles from Church Point, thirty-three miles south from Digby, the county town, and thirty-six miles north of Yarmouth.

Some years prior to confederation, a breakwater was built by the inhabitants, aided by the provincial government.

In 1873, four blocks of cribwork, in the middle of the breakwater, were partially destroyed by a gale, and the sum of \$600 from the 'Provincial Navigation Securities' was expended in repairs.

In 1891-2, the sum of \$100 was expended by the department in repairing the upper portion of the work, which was considerably damaged by an exceptionally high tide in the autumn of 1890. A piece 20 feet square by 5 feet deep was rebuilt, and 100 tons of additional ballast was placed in the work.

This breakwater was substantially built of stone-filled cribwork of the usual type. It is 400 feet long, 20 to 35 feet wide, and 20 feet high at the outer end, where there is an 'L' 40 feet long by 25 feet wide. It is much used during the summer months for shipment of piling, cordwood, lumber and timber, and small quantities of fish and the landing of general merchandise and supplies for local trade and consumption. Little or no use of it is made in the winter, owing to the accumulation of the ice. At high water ordinary spring tides there is a depth of 15 feet of water at the outer end. At low water, the sand flats are bare for many hundred feet beyond the breakwater.

In 1900-1, the sum of \$279.32 was expended in taking down and rebuilding a portion of the outer end, 10 feet wide on top and 20 feet wide at bottom, and in renewing 44 feet in length of the floor with stringers and guards. This work was the repair of damages done by the great storm of March 1, 1900.

In 1904-5, the sum of \$2,000.13 was expended in extending the breakwater by a new block 40 feet long, 31 feet wide, and from 20 to 30 feet high.

6-7 EDWARD VII., A. 1907

In 1905-6, the sum of \$4,998.53 was expended in:—

(a) Taking down and rebuilding a portion of the south side and outer end, 95 feet long, 10 feet wide and from 12 to 18 feet high.

(b) Taking down and removing an old block on the north side of the outer end, 35 feet long, 25 to 30 feet wide and 20 feet high, which was falling to pieces and obstructing the further extension of the work.

(c) Constructing a reinforcing block on the north side of the shore end of the work, 50 feet long, 10 feet wide and from 10 to 12 feet high.

(d) Constructing an extension of the breakwater, 60 feet long, 31 feet wide, 20 to 22 feet high, with an 'L' to the north 30 feet long, 25 feet wide and 22 feet high. The last item was not quite completed at the close of the fiscal year.

LITTLE JUDIQUE.

Little Judique, Inverness county, is on the east side of St. George's bay, 4 miles south of Port Hood and 22 miles north of the northern entrance to the Strait of Canso. The entrance, at the southern extremity of a sand beach, is obstructed by a reef of conglomerate rock over which there is a depth of only 9 inches at extreme low water. Spring tides rise 4 feet.

In 1904-5, the sum of \$985.63 was expended in constructing a breakwater, of cribwork, 70 feet in length, 14 feet in width, on top, and 9½ feet in average height in shoal water on the northern side of the entrance.

During the fiscal year 1905-6, the sum of \$998.67 was expended in extending the breakwater 70 feet to 2 feet at extreme low water. The extension is 14 feet in width, on top, and 13 feet in average height.

LITTLE NARROWS.

Little Narrows, Victoria county, is on the south side of the Little Narrows, a contraction of St. Patrick's channel, an arm of the Bras d'Or lake, at a point 7 miles to the eastward of the village of Whycocomagh.

A wharf constructed at Little Narrows in 1887-8, partly reconstructed in 1897-8 and repaired and extended in 1901-2, consists of a shore block, 47½ feet in length and 20 feet in width, and a pile extension, 52 feet in length, to a 'T' head 60 feet in length and 32 feet in width.

During the fiscal year 1905-6, the sum of \$720 was expended in renewing the piling and covering of the inner portion of the 'T' head, 60 by 20 feet, and in general repairs.

The outer 12 feet of the head built in 1901-2 is in good condition.

LIVERPOOL.

Liverpool is one of the most important towns on the south coast of Nova Scotia, situate at the mouth of the Mersey river. The population of it and surrounding villages of Milton and Brooklyn is about 5,000. Lumbering, ship-building, fishing with a small amount of farming, compose the chief industries of this locality. The harbour is small and at its mouth is a bar which has been the cause of much inconvenience to the chief industry of this town, namely, ship-building and navigation. This bar has been dredged a number of times by the department's dredges, only to fill in again in an incredible short period. After an examination, by divers, it was found that large boulders were situated along the bar. A sum of \$3,000 was appropriated for the purpose of removing these obstructions. Of this amount the sum of \$2,998.02 was expended. The steamer *Help* with her diving crew and appliances were given the work at \$45 per day. This vessel has a crew of 9 men, three of whom are experienced divers, so that they had a diver at work for at least 9 out of the 10 hours of the day. The results proved most satisfactory, as 995 tons of stone, at a cost of slightly more than \$3 per ton were removed. Owing to the prevalence of fresh water which made

SESSIONAL PAPER No. 19

an examination difficult and the fact that many of the rocks were larger than at first thought, the work was not completed and an additional sum of \$2,000 has been granted for this purpose. This river is also navigable above the bridge for a considerable distance, and some few stones were removed from that vicinity. As the Halifax and Southwestern Railway Company have a temporary fixed bridge across the river, this work cannot be completed this year.

LIVINGSTON'S COVE.

Livingston's Cove, Antigonish county, is on the southeastern shore of Northumberland strait, about 2 miles southwest from Cape George.

For the purpose of affording shelter to the fishing boats of the district and a landing place for steamers and small vessels, a pier, extending to 9 feet at low water was commenced by the department in 1899, and completed in September, 1902.

The work is 312 feet in length, and is approached by a road cut through the clay bank 105 feet in length. The pier is a continuous structure and consists of a shore abutment with stone retaining walls, 30 feet long and 18 feet wide, on top; of a cribwork block 80 feet long and 19 feet wide; and a cribwork extension, 202 feet long and 24 feet wide with an 'L,' on the southern side of the outer end, 24 by 24 feet. The cribwork is constructed with native squared timber, laid with 7-inch openings, is fully ballasted and fendered, and the northern or seaward face, the outer end and the southern face of the 'L,' were sheathed with hardwood.

Contrary to expectation it was found that the teredo was injuring the work, particularly on the seaward face and end, and for the preservation of the work during 1903-4-5, a stone talus was placed along the seaward face to within 20 feet of the outer end, and creosoted piling were driven at the end of the seaward face, on the outer end, and around the 'L.'

The sum of \$999.51 was expended during 1905-6 in raising the stone talus, in repairing the cribwork at the inner end, and in protecting, temporarily, places on the inner face of the work which showed signs of damage by the teredo, by native timber close-sheathing, driven into the sandy bottom.

Spring tides rise $4\frac{1}{2}$ feet.

LONG POINT.

Long Point, Craigmore, Inverness county, is on the eastern shore of St. George's bay, about 15 miles to the southward of Port Hood, and 8 miles to the northward of the entrance to the Gut of Canso.

The point extends out a distance of about 500 feet from the general coast line and forms a small cove at its eastern side, which being partially sheltered from northerly winds and having a good landing beach, is resorted to by the fishing boats of the vicinity.

For the purpose of improving the landing and for the better protection of fishing boats, the sum of \$2,000 was voted for 1904-5, towards the construction of a breakwater off Long Point, and of the amount voted, the sum of \$1,830.96 was expended in procuring the materials required for the construction of a native round timber work, 210 feet long and 20 feet wide, and in constructing the bottom of its inner end, for a distance of 70 feet.

During the year ended June 30, 1906, the sum of \$2,000 was expended in completing the work commenced during the previous year and improving the road to the breakwater along the beach.

LOWER PLYMOUTH.

Lower Plymouth, Yarmouth county, is a thrifty settlement of 500 to 600 people, engaged in fishing and farming, situated about 7 miles southeast from Yarmouth, the county town, on the right or west bank of the estuary of the Tusket river.

6-7 EDWARD VII., A. 1907

In 1901-2, a small pile-wharf was built in the upper part of the settlement at a cost of \$600.

For the convenience of the inhabitants of the lower settlement, the department, in 1905-6, expended the sum of \$1,544.46 in building a small wharf on the site of an ancient private wharf, built some 20 or 30 years ago, and several years ago was made over to the public. The work consists of a block and span wharf, 60 feet long and 25 feet wide, 3 blocks each 10 feet by 25 feet and from 12 feet to 14 feet high, and three spans of 10 feet each. The approach to the wharf is an embankment of stone and earth, 150 feet long, the full width of the wharf and from 3 to 8 feet high.

Spring tides rise about 12 feet.

LOWER SHIP HARBOUR.

Ship Harbour, Halifax county, is situated on the Atlantic coast of Halifax county, about 50 miles east of the city of Halifax. It is a large well-sheltered harbour, about $5\frac{1}{2}$ miles in length, and one to $1\frac{1}{2}$ miles in width. At the head of the harbour a large lumbering industry is carried on, the average cut annually being about seven million feet. At this place there is a settlement of about 400 people. The settlement at Lower Ship Harbour is situated about four miles below the head and is a thrifty fishing and farming village of about 500 people.

During the fiscal year 1905-6, the department expended the sum of \$1,947.34 in the construction of a block and span wharf. The wharf is 80 feet long, 20 feet wide, and 20 feet high at the outer end, where at L.W.O.S.T. there is 11 feet of water. At the outer end of the work is an ell 80 feet long by 20 feet wide. The approach consists of a stone bank 50 feet long, 20 feet wide, and of an average height of 8 feet. A small freight shed was built on the outer end of the wharf.

Spring tides rise $6\frac{1}{2}$ feet, neaps, 5 feet

MABOU BRIDGE.

The village of Mabou, Inverness county, is on the northeast side of Mabou river, where it is crossed by a highway bridge, at the head of navigation, 4 miles from its entrance into the gulf of St. Lawrence.

Of the appropriation for 1904-5, which was for expenditure towards the construction of a wharf on the southwest side of a proposed 10 feet low water channel, through flats nearly dry at low water to the bridge, \$968.18 was expended in procuring the materials required for a pile wharf, 121 feet in length and 20 feet in width, and for a cribwork approach 40 by 40 feet (with pilework 10 feet in width at its channel base) adjoining the approach to the bridge, in driving half the bearing piles and in nearly completing the approach.

During the fiscal year 1905-6, the sum of \$1,318.59 was expended in completing the pilework, in placing one course of round timber at the sides and end of the approach, in procuring materials for a 60 foot extension of the pilework, and in driving and capping the bearing piles of the extension.

MABOU HARBOUR.

Mabou harbour, Inverness county, is on the west coast of Cape Breton island, 6 miles northeast from Port Hood.

The entrance was formerly at the southern extremity of a range of sand hills and by an intricate channel obstructed by a bar, over which there was a depth of only 4 feet at extreme low water.

The opening of a new channel through the sand hills at the northern extremity was undertaken in 1872. A pier 835 feet in length, on the southern side of the new channel, was completed in 1876, and the same year the old channel was closed. Expenditures were made nearly every year from 1876 to 1902 in repairs to the pier, the

SESSIONAL PAPER No. 19

construction of brush and stone work on the southern side, of protection works on the north side of the channel and in dredging.

On completion of repairs undertaken in 1901-2, the work included:—

On the south side: (a) the remains of a pier, 835 feet in length and 20 feet in width, founded in about 12 feet at extreme low water, sloping from about 10 feet below extreme low water, at the face, to 2 feet above extreme low water at the back.

(b) A work of brush and stone of various widths extending outward from the outer end of the pier about 1,600 feet, the inner end of which is 8 feet above and the outer end 5 feet below extreme low water.

(c) Brush and stone work at the back of the pier 800 feet in length, 10 to 12 feet in width, on top, and 7 feet in average height.

(d) On the north side, 5 pile and brush groynes, 4 of which are from 75 to 85 feet in length, and one 45 feet.

In 1903, the minimum depth at extreme low water over the bar, about 600 feet out from the head of the pier, was 8 to 3 inches. Spring tides rise 4 feet. Since 1903, the depth over the bar has been increased by dredging.

During the fiscal year 1905-6, the sum of \$299.94 was expended in repairing the groynes on the north side of the entrance to the harbour.

MAIN-À-DIEU.

Main-à-Dieu, Cape Breton county, is a small harbour off the eastern coast of Cape Breton Island, ten miles to the northward of Louisburg.

A breakwater 230 feet in length, consisting of a cribwork core, fully ballasted and covered with stone sloping 3 to 1 on the seaward side and outer end, and 2 to 1 on the inner side, was constructed by the department on the east side of the harbour in 1881-2.

On August 1, 1904, a contract was entered into in the sum of \$8,725 for the construction of a breakwater on the west side of the harbour, designed to stop the undertow and thus make the anchorage safer, but up to the end of the year 1904-5, the work of construction had not been commenced.

The work under contract was commenced on August 9, 1905, and completed on November 6 of the same year. This breakwater is 320 feet in length, 14 feet in width on top, and 10 feet in average height, and consists of round timber cribwork with creosoted timber substructure, fully ballasted, close-fendered on the seaward side and protected on the seaward side by a talus of stone sloping 3 to 1 from high water mark.

The total expenditure during the last fiscal year amounted to \$9,242.50.

MALAGASH.

This work was let by contract to Mr. J. B. Robertson, of Fox Harbour, N.S., for \$3,447. No work has been performed this fiscal year, but it is expected to be completed this fall.

Total expenditure during 1905-06, \$176.56.

MALIGNANT COVE.

Malignant Cove, Antigonish county, is situated on the south-eastern shore of Northumberland strait, about midway between Arisaig and Georgeville, and distant about four miles from each.

The sum of \$5,000 was voted for expenditure during 1899-1900 towards opening a channel for boats through the gravel beach into a small pond at the head of the cove and for the construction of channel protection works. A plan and specification for works extending outward to seven feet at low water springs were prepared, and the sum of \$3,893.35 was expended during the year in procuring the materials required for the construction of the channel protection works.

The works proposed included the construction of piers, placed 60 feet apart, on either side of the channel, which was to be excavated to a width of 30 feet in the

6-7 EDWARD VII., A. 1907

bottom and to a depth of 2 feet below low water. The piers extending 248 feet inwards, through the beach, from low water outside, to be 10 feet wide on top and founded at low water; those extending from low water outwards to be 16 feet wide for a distance of 60 feet and 22 feet wide for a distance of 30 feet. All cribwork was to be built of round native timber, laid open-faced, fully ballasted and close-sheathed at the ends and on the channel faces, the sheathing on the channel faces of the work through the beach to be driven into the beach to a depth of 4 feet below low water mark.

In 1900-01 the sum of \$6,123.64 was expended in the construction of the outer piers, each 90 feet in length, and of a portion of the inner pier on the eastern side of the channel 188 feet in length.

During 1901-02 the work proposed was completed, and a cribwork extension to the western inner pier, 60 feet long and 10 feet wide, was constructed to prevent the re-opening of the old channel through the beach; the expenditure incurred amounted to \$2,464.85.

In the year 1902-3 the inner end of the western pier, which, for a distance of 70 feet, was built lower than the outer portion, was raised to the same level, a height of 2 feet, and planked over; beach protection works, consisting of a cribwork block, 40 feet long, 12 feet wide and averaging 10 feet in height, and of an extension of piles, brush and stone, 50 feet long, were constructed on the eastern side of the eastern pier, to prevent the sea from washing over the beach and carrying sand into the channel between the piers. The amount expended during the year was \$799.94.

During the fiscal year ended June 30, 1904, the sum of \$1,099.07 was expended in close-piling the outer ends of the piers and their faces for a distance of 20 feet from the ends, with hardwood piling; in replacing ballast washed out of ends of piers and in extending the beach protection work on the eastern side of the eastern pier for a distance of 40 feet with cribwork.

The amount voted for expenditure during 1904-5, viz., \$2,800, was intended for close-piling, with creosoted timber, the outer ends of the channel piers, which had been weakened by the teredo. The necessary materials were procured, but before the delivery of the creosoted timber it was found necessary to extend the beach protection work on the eastern side of the eastern pier, at a cost of about \$500, and the remaining balance of the appropriation proved insufficient to drive all the piles as intended. The faces of the piers were prepared to receive the piles, by placing three walings on them, and of the 120 piles to be driven, 35 were placed and secured on the eastern face and outer end of the eastern pier. Total expenditure, \$2,799.94.

The sum of \$1,000 was voted for expenditure during 1905-6 in close-piling, with creosoted timber, the outer end faces of the western pier, for which the timber had been procured during the previous year, and for reballasting the outer ends of both piers; but as, during a gale in the spring of 1905, 26 pieces of piling were swept off the beach and were lost, a portion only of the outer end could be close-piled with creosoted timber, and the balance had to be piled temporarily with hardwood timber. The ends of both piers were reballasted and some new covering was laid, and out of the amount voted the sum of \$988.42 was expended during the fiscal year.

MARBLE MOUNTAIN.

Marble Mountain, Inverness county, is a settlement on the northern side of West bay, an arm of the Bras d'Or lake, about 14 miles to the eastward of the head of the bay.

The place was of very little importance until a few years ago, when the extensive limestone quarries there were bought by the Dominion Iron and Steel Company, which employs a large number of men, and ships the output of the quarries to Sydney, to be used in connection with their smelting works.

A steamer plies, four times a week, during the season, between Marble Mountain and Grand Narrows, making connections with the Intercolonial Railway trains.

SESSIONAL PAPER No. 19

The sum of \$2,000 was voted for expenditure during 1905-6 towards the construction of a public wharf, but there being no information regarding the locality nor its requirements, on December 1, 1905, instructions were received to make the necessary survey.

On February 27, 1906, a report, with plan, on the construction of a wharf were submitted, and on May 28 instructions were received to expend the sum of \$1,000 for materials.

The proposed work is a native timber block and span structure, 150 feet long and 20 feet wide.

The expenditure during the fiscal year of 1905-6 amounted to \$895.

MARGAREE HARBOUR.

Margaree harbour, at the mouth of Margaree river, Inverness county, is on the west coast of Cape Breton Island, about thirty miles northeast of Port Hood. It has a narrow intricate channel through which the tide runs at the rate of four knots, and its entrance is obstructed by a bar of shifting sand, over which there is, at times, a depth of only 5 feet at extreme low water.

Expenditures have been made by the department in the construction and maintenance of channel protection and improvement works on the west side of the entrance, and in the construction of beach protection works on the east side.

The works on the west side include works built by the provincial government and extended by the department, and works of improvement undertaken in 1900-01.

The old provincial government works (reconstructed by the department) extended 400 feet from the shore, across what was originally a false channel, to a large rock opposite the inner entrance and thence, at right angles, to the edge of the channel.

The work built by the department extends from the north side of the outer provincial government works outwards, along the west side of the channel 595 feet. It is in four sections; 85 feet (built in 1876), 130 feet (built in 1879), 200 feet (built in 1890), and 180 feet (built in 1899), respectively, 18, 16, 18, and 20 feet in width on top, and 15, 14, 12 and 16 feet in height. Each section is of round timber, open-faced and is fully ballasted and close-fendered at the sides and outer ends. The top of the covering is from 4 feet 4 inches to 5 feet above extreme high water. The depth, at extreme low water along the channel face, originally varied from 7 to 2½ feet. Spring tides rise 4 feet.

The improvements undertaken in 1900-1 and completed, with the exception of part of the submarine rock excavation in 1902-3, included: deepening along the channel face of the extension to 8 feet at low water, over a distance of about 400 feet, and the construction of a shear-dam, within the entrance, 180 feet in length, including 25 feet of brush and stone work, 11 feet wide on top, 100 feet of pile and brush work 10 feet wide, and 55 feet of cribwork, 22 feet wide, founded on brush in from 1 foot 3 inches to 9 feet 9 inches, at extreme low water.

Expenditures were made in 1903-4, and 1904-5, in continuing the submarine rock excavation and in general repairs.

During the fiscal year 1905-6, the sum of \$1,495.15 was expended in continuing the deepening to 8 feet at low water (submarine excavation), in reconstructing 239 feet of the upper portion of the old work, across the false channel, from the outer rocks inwards, and in reballasting some of the face-chambers of the extension.

MARGAREE ISLAND.

Margaree Island, Inverness county, is situated in the Gulf of St. Lawrence, 2½ miles off the western coast of Cape Breton Island, and 27 miles northeast from Port Hood.

In 1889-1900 and 1900-01, the sum of \$3,312.34 was expended in procuring materials and in nearly completing a wharf, near the southern extremity of the island,

6-7 EDWARD VII., A. 1907

98 feet in length and 20 feet in width, including a stone abutment 26 feet in length and a cribwork block extending 72 feet to 5½ feet at low water.

During the gale on September 12, 1900, the 72-foot block, after losing its ballast, was moved 17 feet out of position and the stone abutment was destroyed.

In 1901-2, the sum of \$1,399.13 was expended in replacing and completing the 72-foot block, in constructing 28 feet of cribwork between it and the shore, and in making a roadway or approach along the face of the cliff.

During the fiscal year 1905-6, the sum of \$499.68 was expended in repairing the inner portion of the wharf, including the construction of a concrete wall, on the west side, 18 feet in length, 4 feet in width and 7 feet in average height, and the reballasting and covering of the work between it and the east side.

NOTE.—During the winter of 1905-6, 17 feet of the outer end of the wharf was carried away by ice, leaving the adjoining 8 feet empty of ballast.

MARGARETVILLE.

Margaretville, Annapolis county, is the most important village on the south coast of the Bay of Fundy, between Digby Gut and Scott's Bay; it is 42 miles northeast from the former, 36 miles southwest from the latter, and 9 miles north of Middleton, an important station on the Dominion Atlantic Railway. It has a population of about 500 inhabitants, engaged in fishing and farming.

A pier was begun in 1837, by the provincial government, and subsequently extended to a length of 471 feet. The work was taken over by the Public Works Department in 1871, since which time it has had frequent renewals and repairs. In December, 1885, the pier was severely damaged by a storm, a breach nearly 150 feet long being made clear through it, besides receiving other injuries. The Margaretville Pier Company transferred their title in the pier to the government on August 3, 1886. In 1886-7, the above described damage was made good. In October, 1890, a severe gale made a breach of 117 feet in the outer portion of the work, besides doing other damage. In March, 1894, the remaining block, 86 feet in length, seawards from the 117 feet gap, was totally destroyed. In 1897-99, the outer block was rebuilt. This new block, which is substantially built of round-log cribwork, close-sheathed on the seaward face and outer end, is 185 feet long, 42 feet wide, and from 22 to 23 feet high. In 1900-1, the sum of \$500 was expended in renewing the floor on the shoreward end of the work and other miscellaneous repairs.

In 1902-3, the sum of \$768.21 was expended in sheathing the seaward face of the breakwater for a length of 155 feet on the shore end, and in removing gravel from the eastern or land side to improve the schooner berth. Also the sum of \$1,550.50 was expended in constructing a new breakwater, 250 feet to the eastward of the main work. The new breakwater is 110 feet long, 16 feet wide and 7 feet high at the shore end, 25 feet wide and 16½ feet high at the outer end. The work is substantially built of round-log cribwork, well fended, bolted and filled with ballast.

In 1903-4, the sum of \$500 was expended in building a short piece on the shore end of the main or west breakwater, 14 feet long, 25 feet wide and 8 feet high. Also in constructing a small inner block on the east side of the shore end, 22 feet long, 7 feet wide and 8 feet high. A few petty and miscellaneous repairs were also made to the flooring of the breakwater.

In 1904-5, the sum of \$1,985.04 was expended in extending the eastern breakwater. The new block is 90 feet long, 30 feet wide, and, when completed, will be 17 feet high at the inner and 26 feet high at the outer end. At the end of the fiscal year, the new work was built to within 7 feet of its finished height. In 1904-5, the sum of \$600 was expended in sheathing a portion of the outer end of the breakwater with creosoted 6-inch plank as a protection against the ravages of the limnoria.

In 1905-6, the sum of \$1,579.85 was expended in a second extension to the eastern breakwater. The new block, which is substantially built of round-log cribwork, filled with ballast and well fended, is 90 feet long, from 28 to 30 feet wide, and from 20 to

SESSIONAL PAPER No. 19

23 feet high. A small breach in the seaward face of the western breakwater, which had been made by seas and ice the previous winter, was also repaired.

MCKAY'S POINT.

McKay's Point, Victoria county, is on the western side of the entrance into St. Patrick's channel, an arm of the Bras d'Or lake, and about 2 miles, by water, from Baddeck, the shiretown of the county.

The steamer *Blue Hill*, carrying mails, freight and passengers, makes, during the season of navigation, two return trips daily between Baddeck and Iona station, on the Intercolonial Railway, and as McKay's Point is on her course, in order to place the inhabitants of the district in direct communication with these places, on April 30, 1904, a contract was entered into, in the sum of \$5,442 for the construction of a wharf extending to 12 feet at low water.

The work was commenced on September 15, and was completed on December 2 following.

The wharf is a block and span structure, 206 feet long and 20 feet wide, with an 'L' on the western side of the outer end, 20 by 20 feet, and is composed of a shore abutment 28 feet long; of four cribwork blocks, 17 feet long; and of an outer block 20 by 40 feet, with openings between them 18 feet in length. The blocks are constructed of round timber, laid open-faced and creosoted to high water, lake level, fully ballasted and fendered; and the outer faces of the outer block are close-sheathed, as a protection against ice.

Shortly after its construction, the outer block of the wharf settled gradually to the outer face, where the settlement was about 18 inches, and as the steamer which calls here, has very high guards, and danger existed of their being caught on top of the cap-timber, at high water and when there was any sea on, during 1905-6, the sum of \$100 was expended in raising the face and ends of the outer block, 30 inches, by placing 3 pieces of 10 by 10-inch timber on top of the cap-timber, well secured to each other and to the cap and braced on the inside.

METEGHAN.

Meteghan, Digby county, is situated on the south side of St. Mary's bay, twenty-five miles north from Yarmouth, twenty miles south of Weymouth, two and a half miles from Meteghan river, forty miles south from Digby, the county town. The nearest railways station, on the Dominion Atlantic Railway, which lies approximately parallel to the coast, and has its terminus at Yarmouth, is about seven miles distant. The whole coast of St. Mary's bay, from Digby to Yarmouth, is thickly settled, being in fact almost one continuous straggling village for the whole distance of sixty-seven miles.

Meteghan, next to Digby and Yarmouth, is the largest and most important settlement on the bay shore, having a population of 1,000 people engaged in farming, fishing, lumbering and general trade.

The harbour works consist of a breakwater and landing pier, of cribwork, built between 1837 and 1860 by the provincial government and the inhabitants. The pier is 300 feet long and 20 feet wide. The breakwater, 20 to 26 feet wide, runs out a distance of 925 feet from the shore, and has a return or 'L' of 85 feet at the outer end, which is 24 feet wide and 30 feet high, standing in from 25 to 27 feet of water, at H.W.O.S.T.

In 1875, at which date the work appears to have been taken over by the department, the breakwater was extended and repaired.

In 1878, an additional length of 100 feet was built with a portion of the 'L' at the outer end, at a cost of \$3,000, and in 1881 the sum of \$2,250 was expended in still further extending the structure by an additional length of 50 feet on the 'L.'

In 1882-3, the sum of \$500 was expended in reballasting and close-piling portions of the work, and in miscellaneous repairs. In 1883-4, \$32 was expended in securing

6-7 EDWARD VII., A. 1907

some of the fenders and a portion of the flooring at the outer end. In 1884-5, the damage caused by a severe gale of the previous November was made good, at a cost of \$96.64; a breach, 25 feet long and from 4 to 6 feet deep, was closed with solid work; 40 feet of new break was added and some new ballast was put in to replace that washed out. In 1887-8 the seaward face of the breakwater was close-sheathed for 700 feet in length; 575 feet at the inner face was repaired and sheathed, the whole work levelled up, and some minor repairs executed. The expenditure in this year was \$1,447.33, which in the departmental report for the year is given as a refund to the provincial government on account of moneys expended by them between 1867 and 1879. In 1892-3 the department expended the sum of \$299.72 in making slight repairs to the breakwater and in temporary repairs to the landing wharf. In 1893-4, the sum of \$2,627.54 was expended in making thorough repairs to the landing pier and wharf. The work done consisted of rebuilding and face-fendering the outer block 50 feet in length; building a new top and back, 8 feet thick, to the next length of 16 feet and thoroughly re-fendering and capping the remainder of the work, a length of 260 feet.

In 1897-8, the sum of \$3,141.99 was expended in constructing a re-enforcing block along the whole length of the outer face of the 'L' of the main breakwater. This work, which was rendered necessary by the eating away of the bottom timbers by the limnoria and the consequent settlement of the breakwater, is 100 feet long, 12 feet wide and 24 feet high. The upper portion of the 'L' was also built 35 feet wide, 4 feet high, which restored it to the height of the rest of the work. The new work is well and substantially built of round-log cribwork, well fendered, ballasted and close sheathed on all exterior faces.

In 1898-9, the sum of \$1,093.20 was expended in renewing a length of 120 feet by 8 to 10 feet in height and by 8 to 10 feet in width, of the lower portion of the outward end of the seaward face of the breakwater, which had been eaten away by the limnoria; the work close sheathed for the same distance and for 40 feet on the inner side, about 10 feet in length of the flooring was removed; a breach 30 feet long on the seaward side, adjacent shorewards, to the 120 feet before-mentioned, was also closed up.

In the fiscal year 1899-1900, the sum of \$2,000 was expended in extensive renewals and repairs to the breakwater. The work done consisted of the rebuilding of 100 feet in length of the seaward face and 90 feet of the inner or shoreward face, about 8 feet wide from top to bottom of the work, placing top cross logs all across the breakwater to tie the new portions together and new floor on the portions renewed.

In 1900-1, the sum of \$3,499.95 was expended in rebuilding a serious breach made in the work by a severe gale in March, 1900. The new block which had to be built from the bottom, is 180 feet long, 22 feet wide and 18 to 22 feet high. In addition to this a length of 222 feet of the top of the breakwater was refloored and partly close sheathed, the floor having been destroyed by the storm referred to.

In 1901-2, the sum of \$3,199.93 was expended in continuing the restoration of the breakwater that had been going on for the last three or four years. The work done consists of a piece 138 feet long, in about the middle of the length of the wharf, being taken down and rebuilt. Of the next 200 feet shorewards, the northern face was taken down and rebuilt 10 feet wide.

In 1902-3, the sum of \$2,997.47 was expended in completing the rebuilding of a piece in the middle of the breakwater, 123 feet long, 20 feet wide on top and from 9 to 11 feet high, that had been destroyed by a violent gale in the winter of 1901-2.

In 1903-4, the sum of \$2,300, was expended in continuing the reconstruction of the work carried on during the past two years. The work done this year consisted of the taking down and rebuilding of 80 feet in length of the shoreward end of the work.

In 1904-5, the sum of \$2,000 was expended in further restoration, the work done consisting of the completion of the 80 feet long block, near the shore, that was partially rebuilt last year; the taking down and rebuilding of a further length of 102 feet;

SESSIONAL PAPER No. 19

and on the south side of the extreme shore end, the restoration of a length of 100 feet, and the construction of a break to keep the gravel from washing into the berth alongside.

In 1905-6, the sum of \$4,336.53 was expended in taking down and rebuilding a length of 92 feet near the outer end of the breakwater, 28 feet wide and 23 feet high, that was much decayed and threatening to fall, also a piece near the shore end, 75 feet long, 20 feet wide on top, 10 feet wide at the bottom, and 15 feet high, also in bolting to the outer face of the work 6-inch creosoted sheathing, as a protection against the limnoria.

MIDDLE COUNTRY HARBOUR.

Country Harbour, Guysboro' county, is on the Atlantic coast of Nova Scotia, immediately west of Isaac's harbour. It has an excellent land locked anchorage in $4\frac{1}{2}$ to 7 fathoms, 4 miles inland, and is navigable for large vessels $6\frac{1}{2}$, and for small vessels to Narrows Point, $8\frac{1}{2}$ miles inland. Boats can ascend the river to the head of tide, 2 miles above Narrows Point.

The sum of \$3,000 was voted for expenditure during 1905-6, in the construction of a wharf at Middle Country Harbour, 7 miles inland, or one mile below the head of navigation for small vessels at Narrows Point.

On November 7, 1905, plan and specification for the construction of the proposed wharf were submitted, but up to the end of the fiscal year no further action has been taken in the matter.

The proposed wharf is a block and span structure 143 feet in length, and extending to $14\frac{1}{2}$ feet at low water, and consisting of a dry stone embankment 22 feet wide on top; three cribwork blocks, 20 by 20 feet, on top, and of an outer block 20 by 30 feet, with openings between the blocks 16 feet in length and spanned over. The blocks are to be constructed of round, native timber, laid open-faced, and properly ballasted and fendered.

The total expenditure incurred during the last fiscal year amounts to \$29.02.

MIDDLE RIVER.

Middle River, Victoria county, is a large stream emptying into Indian bay on the northern shore of St. Patrick's channel, an arm of the Little Bras d'Or lake.

About five miles from its mouth the river flows through alluvial soil, easily acted upon by the strong current during freshets, and in consequence a large amount of valuable land has been destroyed.

During 1903-04-05 a shear dam, 600 feet long and 15 feet wide, and built with piles, brush and stone and sheathed on the outside, was constructed for the purpose of closing a new channel and to divert the stream into the old river bed, and so straighten the river course.

The work done has proved effective in diverting the stream, which now flows through the old bed, in a straight course, and the danger of destroying the adjoining lands has been greatly lessened.

During the present fiscal year the sum of \$499.73 has been expended in straightening the dam where danger of undermining existed and in extending for a distance of 200 feet the brush and stone protection work at the upper end of the dam to prevent the strong currents from cutting the narrow neck of land between the dam and the mainland, and to form a new channel.

MILL CREEK.

Mill Creek, Hants county, is a small farming settlement of some two or three hundred people, situated on the eastern side of the Basin of Minas, three miles south of Cape Blomidon, about four miles north of Kingsport, the terminus of the Cornwallis Valley Railway, a branch of the Dominion Atlantic Railway.

6-7 EDWARD VII., A. 1907

Some twelve or fifteen years ago the inhabitant, for their own convenience and accommodation in the shipping of fruit and farm produce, built a small pile wharf, but their available means having given out they were unable to finish it. The unfinished wharf was 160 feet long and from 20 to 25 feet wide, built of pile-work. During the fiscal year 1899-1900 the department expended the sum of \$1,904.18 in extending and completing this old wharf. The new work is 79 feet long, in line with the old, with an L at right angles to it, with a face length of 93 feet. The main portion of the new work is 30 feet wide, the 'L' being 25 feet wide. The new work is substantially built of pile-work and close-piled on the west and south faces. It is 20 feet high along the whole length of the face, giving about 17 feet of water at H.W.O.S.T. Spring tides rise here nearly 50 feet, so at low tide there is no water within a quarter of a mile of the wharf.

In 1905-06 the sum of \$1,955.08 was expended in extending the pile work wharf by a substantial block of cribwork, 50 feet long, 28 feet wide and 20 feet high. Owing to the difficulty of getting labour in the month of June, the work was not quite complete at the close of the fiscal year.

MILL COVE.

Mill Cove, Lunenburg county, is a settlement situated on the west side of St. Margaret's bay, four miles south of the village of Hubbard's Cove, and thirty miles due west from the city of Halifax. The population of the settlement, which extends along the shores of the bay for a distance of about six miles, comprises 1,000 people. The principal industry of the people is fishing, the annual value of the catch being estimated by the Department of Marine and Fisheries at \$24,367. About 150 men are said to be steadily employed in the industry during the fishing season.

In the year 1905-06 a contract was awarded by the department for the construction of a breakwater, the amount of the contract being \$19,800, \$1,000 of which has been expended in the purchase of native timber.

Spring tides rise seven feet, neaps six feet. Total expenditure during the last fiscal year was \$997.

NEIL'S HARBOUR.

Neil's Harbour, Victoria county, is situated on the eastern coast of Cape Breton island, about midway between Ingonish and Aspy bays.

The harbour is at the entrance of a small bay, open to the south and southeast, and extending inland about half a mile. It is sheltered from the north and east by Neil's head (a rocky promontory from 10 to 20 feet above the level of high water springs), but is not safe during gales from the south and southeast.

It is a large and important fishing station, and for the purpose of affording protection to the anchorage during southeasterly gales, on May 29, 1901, a contract was entered into for the construction of a breakwater off the southern end of Neil's head, extending into 17 feet at low water. The work was completed in a satisfactory manner on May 29, 1903.

The work included a breakwater 226 feet in length, and a road cutting through the bank 79 feet long and 20 feet wide at the bottom. The breakwater, excepting the inner end, for a distance of 44 feet, which is of round native timber cribwork, consists of close-faced squared timber work, 20 feet wide for a distance of 114 feet from the inner end, 24 feet wide for a farther distance of 80 feet, and 56 feet wide for the remaining 32 feet. The work is very strongly constructed, is filled in solid with ballast, and close-sheathed on the seaward faces, the outer end and on the inner face for a distance of 112 feet from the outer end. The substructure is of creosoted timber, and the seaward side is protected by a stone talus.

During the fiscal year ended June 30, 1905, the sum of \$952.79 was expended in the removal of rocks and boulders off the beach, inside the breakwater, which inter-

SESSIONAL PAPER No. 19

fered with the landing of boats, and in placing the stone thus removed on the seaward side of the breakwater.

During the fiscal year ended June 30, 1906, the sum of \$1,189.44 was expended in raising the talus, which had been flattened out, by placing 729 cubic yards of heavy stone on it. Spring tides rise 4 feet

NEW CAMPBELLTON.

New Campbellton, Victoria county, is at the head of Kelly's cove, on the northern side of the Great Bras d'Or channel, about one mile from its entrance into the Atlantic ocean.

The cove is about half a mile in width at the mouth and a quarter of a mile in depth, and has a depth of water of about 20 feet at low water. It is sheltered from all winds, excepting southwesterly, but as these blow down the channel, they do not cause much inconvenience.

It is the shipping place of the Cape Breton Coal Mining Company, and a considerable amount of coal is shipped from here annually. Owing to the want of a proper and permanent ballast ground, the ballast is often deposited by vessels where most convenient to them, without due regard to the damaging effects, and in consequence the depth of water in the cove is said to have been reduced.

On September 13, 1906, a contract was entered into, in the sum of \$17,000, for the construction of a wharf to serve as a landing place, as well as a ballast wharf, and for repairing and strengthening the old shipping pier, which is to serve as an approach to the proposed wharf.

The work under contract includes the reconstruction of the top of the old shipping pier, the construction of a native round timber cribwork retaining wall along the southern side of the old work, 165 feet long and 12 feet wide on top; a creosoted timber pile extension at outer end of old work, 61 feet in length, and averaging 22 feet in width; and of a cribwork extension, with creosoted timber substructure, to serve as a ballast and public landing wharf, forming an 'L' on the southern side of the pile extension, 200 feet long and 24 feet wide.

The work of construction was commenced early in June, 1906, and by the end of the fiscal year the cribwork retaining wall, on the southern side of the old work, was nearly completed.

The total expenditure during 1906-6, \$1,904.14.

NORTH GUT, ST. ANN'S.

North Gut, St. Ann's, Victoria county, is the local name of the northwestern arm of the head of St. Ann's harbour, a fine basin 7 miles in length and 2 miles wide, situated at the head of St. Ann's bay, on the eastern coast of the island of Cape Breton.

On September, 1904, a contract was entered into for the construction of a wharf at Morrison's Point, in the sum of \$1,850, and the work was completed on May 31, 1905.

The wharf is a block and span structure, extending to 7½ feet at low water, 122½ feet long and 20 feet wide, with an 'L' at the outer end, 20 by 20 feet; it is constructed entirely of round native timber, laid open-faced, properly ballasted and fendered.

During the year ended June 30, 1906, the sum of \$328.02 was expended in improving the road, for a distance of 420 feet, between the wharf and the public road.

NEWPORT LANDING.

Newport Landing, Hants county, is situated on the east bank of the Avon river, about two miles below the town of Windsor, and on an isolated neck of land between St. Croix river on the south and the Kennetcook on the north, the distance by land to Windsor being 14 miles. The nearest railway station is Brooklyn, on the Midland Railway, about 6 miles distant. It is a rich agricultural district, with a population of

6-7 EDWARD VII., A. 1907

about 500 people. Most of the trade of the place is carried on with the town of Windsor by water.

In 1904-5, the sum of \$1,665.28 was expended in purchasing the necessary timber and in commencing the construction of a public wharf.

In the fiscal year 1905-06, the sum of \$3,348.72 was expended in completion of the work. The wharf is 240 feet long, 35 feet wide, and at the outer end 20 feet high.

Spring tides rise about 40 feet.

NOEL.

Noel, Hants county, has a population of about 500, and is situated on the south shore of Cobequid bay, the extreme eastern arm of the Bay of Fundy. It is 13 miles west of Maitland, and 32 miles northwest of Shubenacadie, the nearest railway station on the Intercolonial Railway. It is at this date almost exclusively a farming district, the export of lumber and timber, and the building of wooden ships, which some years ago were important industries, having practically ceased.

In 1889, a public wharf was built by the department by day labour. It consists, first, of 35 feet in length of brush and stone causeway approach; next, a 30-foot block of cribwork, close-faced and filled to the top with gravel and stone; then, 203 feet in length of pile work, 25 feet wide on top, with a double row of close-piling on the exposed or northern side, and an 'L' at the outer end, with a face-length of 62 feet. Along the outer face of the 'L' the work is 24 feet high, having a depth of water at H.W.O.S.T. of 21 feet.

In 1900-01, the sum of \$60.15 was expended in renewing the planking of the outer end of the wharf.

In 1904-5, the sum of \$1,000 was expended in repairs and renewals to the top of the wharf.

In the fiscal year 1905-06, the sum of \$1,031.68 was expended in completing repairs to the top of the wharf. The repairs consist of the renewal of the whole top of the work, floor planking, stringers, guard-timbers, some caps and fender piles.

The work was transferred to the control of the Department of Marine and Fisheries on October 5, 1898.

Spring tides rise 50½ feet; neaps 43½ feet.

NORTHEAST HARBOUR.

Northeast Harbour is a small village of about 400 people, situate about 2½ miles east of Cape Negro Island. There has been no landing facilities for the people, and this has hindered their fishing operations, besides inconveniencing them in the landing of fish and the taking away their supplies. To remedy this the department decided to construct a wharf which could be utilized at all times of tides.

During the last fiscal year the sum of \$3,000 was expended upon this work.

The work, when completed, will consist of a composite cribwork and rockband approach, about 180 feet long, 14 feet wide; 900 feet long of pile trestle bent work, 10 feet wide, and a 'T'-shaped head, 50 feet square, also constructed of pile trestle bents. It will have at its head a depth of water of from 7 to 8 feet at L.W.O.S.T.

At the end of the fiscal year, the approach was completed, the 900 feet of pile trestle-bent work finished, with the exception of about one-half of the covering and guard-rails.

NYANZA.

Nyanza, Victoria county, is a settlement situated between the mouths of Baddeck and Middle rivers, on Indian bay, on the northern side of St. Patrick's channel, an arm of the Bras d'Or lakes, and 7 miles to the westward of the town of Baddeck.

SESSIONAL PAPER No. 19

It is a port of call for the steamers of the Bras d'Or Steam Navigation Company, plying between the Sydneys and Whycocomagh, and the shipping place for a large agricultural district.

The wharf, constructed by the department during 1893-4-5 and widened during 1901-2, is 136 feet long and 40 feet wide, and extends to 12 feet at low water. It is constructed of brush, with faces battering 1 in 6, and is covered with gravel and fendered with hardwood piles.

During 1902-3, a warehouse, 30 by 18 feet, was constructed on the western side of the inner end of the wharf.

The sum of \$500 was voted for expenditure during 1905-6, for the purchase of about half an acre of land at its head, required for yarding cattle, sheep, &c., and for renewing the fender piles around the outer end of the wharf.

Owing to the non-delivery of the creosoted timber required for fender piles, these could not be placed by the end of the fiscal year.

The total expenditure incurred during the fiscal year amounts to \$398.06.

OGDEN'S POND.

Ogden's Pond, Antigonish county, is on the western shore of St. George's bay, about 13 miles south from Cape George, and 9 miles north from the town of Antigonish. It is a small sheet of water, about 100 acres in extent, separated from the bay by a sand beach of from 130 to 250 feet in width.

For the purpose of rendering the pond, which has a depth of over 10 feet at low water, accessible to boat and small craft, during 1900-1-2, a channel 30 feet wide and 825 feet long was cut through the beach and the flat inside, down to a depth of about $1\frac{1}{2}$ feet below low water, and a channel protection work, 350 feet in length, was constructed on the northern side of the entrance. The work consisted of a brush and stone embankment, 70 feet long and 8 feet wide on top, with sides sloping $\frac{1}{2}$ to 1; a pile, brush and stone work, 260 feet long and 10 feet wide, close-sheathed on the seaward face; and a round timber cribwork block at the outer end 20 by 20 feet, with creosoted timber substructure, and close sheathed on all outer faces.

During the year 1902-3, the sum of \$649.87 was expended in repairing and leveling up the outer block, which has settled by undermining of the sandy bottom, and in protecting its base with brush and stone; also in replacing stone in the pile, brush and stonework, which, being uncovered, had been washed out by the sea.

On November 11, 1902, during a terrific northeast gale, the brush and stone in the work were washed out by the sea, and afterwards, for a distance of 130 feet, the piles were broken off and washed away, leaving the cribwork block at the outer end uninjured.

During 1903-4, the sum of \$1,449.37 was expended in replacing the damaged pile work, for a distance of 130 feet, with cribwork, in refilling the balance of the pile work with brush and stone and in placing a covering over all; and further a quantity of ballast, about 160 cubic yards, was delivered, to be used in the protection to the channel through the flat, inside of the beach.

During the fiscal year ended June 30, 1905, the sum of \$499.86 has been expended in constructing a pile, brush and stone work 100 feet in length, on the south side, and a brush and stone dam, 80 feet in length, on the north side of the channel through the flat, inside of the beach, for the purpose of confining the tidal streams, and the work done has proved very satisfactory.

The sum of \$799.76 was expended during the fiscal year ended June 30, 1906, in the construction of additions to the dams inside of the beach, to confine the channel through the flats. The extensions are, 330 feet long on the northern, and 270 feet on the southern side, 7 feet wide on top and 6 feet high, and were constructed with brush and stone, laid in alternative layers.

6-7 EDWARD VII., A. 1907

OGILVIES.

Ogilvies, Kings county, breakwater wharf, is situated on the south shore of the Bay of Fundy, 55 miles east of Digby Gut and 11 miles north of Aylesford, on the Dominion Atlantic railway. Like other ports on the Bay of Fundy shore, in Kings county, its trade has greatly declined since the construction of the Dominion Atlantic railway, being now restricted to occasional shipments of cordwood, fish and potatoes.

The work here, which serves both as a wharf and breakwater, was built in the year 1854, at the joint expense of the inhabitants and the provincial government. It is 270 feet long, 38 feet wide on the top, and about 27 feet high at the outer end, built throughout of the ordinary type of round log cribwork, and close sheathed at the outer end.

In 1884-5-6, the department expended the sum of \$3,156.63 in strengthening the outer end by building an entirely new block, 20 feet long, and by taking down and rebuilding the old break for a length of 100 feet. In 1890-91, general repairs were made. In 1891-2, the sum of \$500 was spent in repairing and strengthening the shoreward end, 90 feet in length. The face was taken down and rebuilt, being tied into the old work with new cross ties, and the new work well filled with ballast. In 1897-8 a re-enforcing block on the shore end of the east side was built, 153 feet long, 10 feet wide, and to the full height of the work, to support the breakwater, which was leaning over and threatening to fall. In 1898-9, the sum of \$50 was expended in placing about a dozen new fenders to replace those broken or destroyed, and in making a few other trifling repairs. In 1900-01, the sum of \$500 was expended in repairs to the shore end of the structure, the work done consisting of the rebuilding of the crib breast work, supporting the road approach on the inner end and shoreward side, the renewal of about 40 feet of the flooring, and the placing in position of 40 new hardwood fenders on the seaward face, to replace those worn out by the wash of the gravel.

In 1904-5, the sum of \$1,870.30 was expended in widening the shoreward side of the outer end of the breakwater. The new work is 114 feet long, 10 feet wide, and from 22 to 24 feet high.

In 1905-6, the sum of \$78.95 was expended in completing the widening of the breakwater which was nearly finished in 1904-5. The work done consisted in the placing of a few fenders, the fastening of the covering and the construction of a ladder.

PARKER'S COVE.

Parker's Cove, Annapolis county, is a small indentation on the southeast shore of the Bay of Fundy, fifteen miles northwest of Digby Gut, and seven miles north of Annapolis, the county town. The population of the settlement is about 250 people, engaged in fishing and farming.

In 1883-4 the department constructed a small breakwater substantially built of round log cribwork, stone-filled, 200 feet long, 23½ to 26 feet wide on top, and at the outer end 16 feet high, where at high tide there is a depth of about 11 feet of water.

In 1900-01, the department extended the breakwater a distance of 101 feet, at a cost, by contract, of \$3,749. The new block is 26 feet wide on top and from 16 to 19 feet high, substantially built of round log cribwork, filled with ballast, well fendered, close-sheathed on the seaward side and outer end.

In 1901-2, the sum of \$73.50 was expended in placing a quantity of large stone on the eastern side of the breakwater, near its outer end, to prevent the waves from undermining the work.

In 1902-3, the breakwater was extended a further length of 130 feet, with an 'L' on the outer end, having a face length of 82 feet. This work, which was built by contract, at a cost of \$10,212.60, is from 20 to 29 feet high, the stem 26 feet wide, and the 'L' 30 feet wide on top. The landward side batters 1 in 6, while the eastward side is plumb and provided with a solid timber break, 4 feet 6 inches high. The work was

SESSIONAL PAPER No. 19

begun on June 11, 1902, and the whole work thoroughly well completed November 20 of the same year. The extension is very strongly built of round log cribwork, filled to the top with stone ballast, well fendered and bolted, and close-sheathed on the seaward face.

In 1903-4, the sum of \$1,191.10 was expended in rebuilding the upper 2 to 4 feet in height, by 25 feet in width, of the shoreward end (the older portion of the breakwater), and in protecting the foreshore on the eastern side of the work with large stone, to prevent the sea from undermining the new block.

In 1905-6, a contract was entered into, in the sum of \$7,100, with Messrs. Thurston, Thurston & Durkee, of Yarmouth county, for the construction of a further extension of the breakwater. The new piece will be 90 feet long, 33 feet wide, and from 28 to 34 feet high.

Spring tides rise about 30 feet.

The expenditure during the last fiscal year amounted to \$116.44.

PARRSBORO'.

Parrsboro' is an important town of about 3,000 people, situate at the right bank of the Partridge Island river, which empties into the north side of the basin of Minas. About fifty million feet of lumber is shipped from this vicinity annually.

The pier built some five years ago consisted of a short length of block and span work, with an additional length of 170 feet of pile-trestle bents and a head 38 feet in length, built of solid stone-filled cribwork. The width of the wharf is 38 feet on top for its entire length. In the fiscal year 1904-5, the sum of \$2,733 was expended in constructing an additional pier, 38 feet long, 38 feet wide, making the last 38 feet in length of the wharf 38 feet wider, the height at this end being about 34 feet.

During the last fiscal year the sum of \$2,500 was appropriated for the purpose of completing this pier, building a freight-house, &c. The pier was completed and a freight-house, 42 feet long and about 50 feet wide, was erected on its head. As the freight-house was nearing completion, the whole sheathed side of the wharf, with fender-piles attached, broke off in a spring gale, and it became necessary to replace it. This has been partially done, that is, the sheathing has been placed to within about 9 feet of the top of the wharf.

Expenditure during the last fiscal year, \$2,513.75.

PEGGY'S COVE.

Peggy's Cove, Halifax county, is situated on the east side of St. Margaret's Bay, near its mouth, and distant, in a westerly direction, about thirty miles from the city of Halifax. The population consists of 150 people, almost wholly dependent on fishing for a living.

The little harbour, which lies between barren granite rocks, is about 400 feet long, 60 feet in average width, and from 7 to 9 feet in depth at L.W.O.S.T. At the mouth of the harbour, which is about 40 feet wide, and over a length of about 100 feet, were strewn some 50 or 60 boulders, varying in size from about 2 cubic feet to 1½ cubic yards.

During the fiscal year 1905-06, the department expended the sum of \$597.61 in the removal of these rocks.

Spring tides rise 7½ feet; neaps 6 feet.

PETITE RIVIÈRE.

Petite Rivière, Lunenburg county, is the centre of a thriving farming and lumbering district, situated about twelve miles south-west of the town of Bridgewater and six miles west of the mouth of La Have river. The village, which has a population of

6-7 EDWARD VII., A. 1907

about 500, is situated at the mouth of a small river from which it takes its name. The nearest railway station is distant six miles, and the nearest harbour at La Have six miles distant.

A small harbour is formed by the channel of the river which empties into a shallow bay through a sand beach. This channel is navigable for large row-boats at high water only, and the residents experience great difficulty in getting their supplies, which are discharged from schooners which anchor in the bay. It is desired that this channel be improved so that small schooners can enter at high water.

During the fiscal year 1905-6, the department expended the sum of \$3,999.83 in purchasing material, &c., for the construction of a breakwater on the west side of the harbour to prevent the accumulation of sand in the harbour and to act as a shear dam in confining the current of the river to a narrow channel in order to create a scour and remove the sand at the entrance of the harbour. The work, when completed, will be 1,200 feet in length, from 5 to 12 feet high; the shoreward end will be 16 feet in width for 900 feet of the length of the work, and the other portion, 300 feet, will be 20 feet wide.

Spring tides rise 6 feet; neaps, 5 feet.

PICTOU ISLAND.

Pictou island is situated in the Strait of Northumberland, about ten miles north-east of the entrance to Pictou harbour.

There are two wharfs on the south side of the island, one near the west end and one, known as the 'east wharf,' near the centre. The west wharf is 324 feet in length and 20 feet in width (with the exception of the inner 55 feet, which is 12 feet wide), and had an 'L' on the east side at the outer end which measured 20 by 30 feet, previous to its enlargement in 1902-03. The east wharf is 328 feet in length and 20 feet in width. The depth at extreme low water, at the outer ends of the east and west wharfs, is respectively 4 feet 6 inches and 4 feet 9 inches. Spring tides rise 6 feet.

In 1901-02, the sum of \$609.60 was expended in repairing the east wharf.

In 1902-03, the sum of \$942.56 was expended in repairing and strengthening the west wharf. The floor-stringers and covering of the outer end were renewed and a 30 by 20-foot block was placed at the outer end of the 'L.'

During the fiscal year 1905-06, the sum of \$172.30 was expended in repairing the east and west wharfs; the repairs included close-fendering (inside) and reballasting the face-chambers at the outer ends.

PICTOU LIGHT BEACH.

The beach forming the southern side of the entrance to Pictou harbour, known as Pictou Light Beach, extends about one mile in a northerly direction inclosing Moodie Cove. The outer end, on which stands a lighthouse and keeper's dwelling, is protected by a breast work of timber and stone 400 feet in length, and by a work of brush and stone extending from side to side, opposite the southern extremity of the breast-work, and inclosing property under the control of the Department of Marine and Fisheries.

In 1904-5, a title was acquired by the Department of Public Works to a portion of the beach 1,520 feet in length, adjoining the property of the Department of Marine and Fisheries.

Works undertaken by the Department of Public Works in 1898-9 for the protection of the beach now include a work of brush and stone 12 feet wide on top and 4 feet high, founded on one foot above extreme high water and extending 1,200 feet from the southern extremity of the breast-work protecting the property of the Department of Marine and Fisheries, and two groynes, one of cribwork 75 feet in length, and one of brush and piles 55 feet in length.

SESSIONAL PAPER No. 19

During the fiscal year 1905-6, the sum of \$996 was expended in reconstructing the top of the brush and stone work, from within 200 feet of its inner end to its outer end, and in repairing the brush and stone groyne.

PLEASANT BAY.

Pleasant Bay, Inverness county, is on the western coast of Cape Breton Island, twenty-four miles north of Cheticamp and about midway between that place and Cape St. Lawrence.

A contract was entered into on January 29, 1906, for the construction of a wharf at Pleasant Bay, for the sum of \$7,500.

The contract is for a continuous cribwork structure, 210 feet in length and from 16 to 20 feet in width, with an 'L' at the outer end, 20 by 20 feet, creosoted to half tide, fully ballasted, and close sheathed on both sides at the outer end.

During the fiscal year 1905-6, all the materials required in the construction of the wharf, with the exception of the ballast, were delivered. The contractors commenced the construction of the cribwork early in June, but up to the end of that month no crib had been placed.

The expenditure during the last fiscal year amounts to \$89.97.

PLYMOUTH.

Plymouth, Yarmouth county, is a small but thriving farming and fishing settlement of some 300 people, situated on the west side of Tusket river, near its mouth, six miles southeast of the town of Yarmouth.

A small wharf was built here by the inhabitants, many years ago, for the accommodation of fishing craft and small vessels loading fish and farm produce and landing sea manure. Being so far dilapidated as to no longer serve the public need, the department in 1901-2, expended the sum of \$488.21 in building a new wharf of pile work, 61 feet long, 25 feet wide, and from 6 to 9 feet high, with an approach of gravel-covered embankment 100 feet long.

In 1902-3, the sum of \$97.88 was expended in removing some obstructions alongside, and in completing the road to the pile wharf built the previous year.

In 1905-6, the sum of \$125 was expended in rebuilding a short block of cribwork which was damaged by ice last winter and in gravelling the road approach.

PLYMPTON.

Plympton, Digby county, is a fishing and farming village of 200 or 300 people, situated on the east shore and near the head of St. Mary's Bay, 12 miles southwest from Digby, and 8 miles northeast from Weymouth.

Some years before confederation, the provincial government built a wharf of cribwork, 230 feet long, 35 feet wide, and at the outer end, 22 feet high, giving at H.W.O.S.T. a depth of 19 feet of water, at a cost of \$3,543.97.

In 1874-5, the department extended the work by a block 34 feet square, and made some necessary repairs to the rest of the work.

In 1900-1, extensive repairs were made at an expenditure of \$1,200. The north side and shoreward end were built from the bottom, a length of 166 feet, a width of 10 feet at the top, and about 15 feet at the bottom, by a height of 4 feet to 17 feet; the outer 56 feet in length was also repaired by placing two new longitudinals on each side, besides a new top piece to the break and 7 new mooring posts.

In 1904-5, the sum of \$1,000 was expended in extending the wharf by the construction of a new block, 35 feet long, 35 feet wide and 22 feet high. At the close of the fiscal year, the work still lacked 2½ feet of finished height.

6-7 EDWARD VII., A. 1907

In 1905-6, the department expended the sum of \$2,500 in completing the extension begun in 1904-5, and in constructing a further extension, 65 feet long, from 30 to 34½ feet wide and 19 feet high. The outer 30 feet in length still lacks about 2½ feet of finished height.

This work was transferred to the control of the Department of Marine and Fisheries on June 12, 1888.

Spring tides rise 22 feet; neaps 18 feet.

POIRIERVILLE.

Poirierville, Richmond county, commonly known as Lower D'Escousse, is a district on the northeastern coast of Madame Island, on the southern side of the eastern entrance to Lennox Passage, a strait separating Ile Madame from Cape Breton Island.

The sum of \$5,000 was appropriated for expenditure during 1905-6, towards the construction of a public wharf, and instructions were given to prepare plans and specification for the same.

On January 18, 1906, plans and specification for the proposed wharf were submitted. The proposed wharf is to be 340 feet long and 20 feet wide, extending to 10 feet at low water with an 'L' at the outer end, 20 by 20 feet, and is to consist of blocks and spans, the former constructed of round timber, with creosoted timber substructure.

On June 26, 1906, tenders were invited.

The expenditure during the fiscal year 1905-6 amounts to \$102.88.

PORTERS LAKE.

Porters Lake, Halifax county, is a long and narrow strip of fresh water, lying nearly north and south, situated about the middle of Halifax county, or about 15 miles east of the provincial capital. It is about 18 miles in length, from a quarter to a half-mile wide, and the water being of good depth for almost its entire length, it is navigable for vessels of about 60 tons to the extreme head. The normal level of the lake is some 2 or 3 inches above high water ordinary spring tides, which on the coast here rise 6 feet; neaps 5 feet.

Up to about 1873, the outlet, which is directly into the Atlantic through a gravel beach, about 200 feet wide, was navigable for schooners drawing 6 feet of water, and a considerable trade was then done on the lake in the export of timber, lumber, cordwood, farm produce and fish. Since that time the outlet has been gradually and permanently filling up with accumulations of gravel washed in by southerly and easterly storms. In order to maintain the outlet, to prevent the road along the margin of the lake from being flooded, and to admit fish into the lake, the following small expenditures have been made by the department:—

1881-1882..	\$200 00
1884-1885..	200 00
1889-1900..	200 00
1892-1893..	147 00
1897-1898..	100 00
1898-1899..	200 00
1899-1900..	150 00
1902-1903..	49 99
1903-1904..	300 15
1904-1905..	160 40

\$1,713 54

These expenditures having resulted in but slight temporary relief, and no permanent improvement, the department in 1900-1, expended the sum of \$8,262.44 in be-

SESSIONAL PAPER No. 19

ginning the construction of a permanent channel through the neck of land 2,400 feet wide, separating the main body of the lake from the extreme head of Three Fathom harbour. In 1901-2, a further sum of \$5,987.24 was expended on the permanent outlet. In 1902-3, the sum of \$2,455.67 was expended on the permanent, and \$49.99 on the temporary (old) outlet.

In 1904-5, the sum of \$4,248.67 was expended on the new or permanent outlet.

In 1905-6, the sum of \$968.68 was expended on the permanent outlet, and \$61.18 on the temporary outlet. During the same year the amount of \$199.92 was expended in beginning a new outlet at Graham's Head. The total expenditure to date is:—

On permanent outlet.	\$21,924 96
On temporary outlet.	1,774 72
On new outlet.	199 92
	<hr/>
	\$23,898 60

PORT GREVILLE.

Port Greville is a village of about 400 people, situate 12 miles west of Parrsboro. Important ship-building and lumbering interests are located at this place.

The harbour is formed by a high gravel bar, lying parallel to the shore, inside of which the river runs for a half mile before reaching low water mark.

For the purpose of protecting this harbour, which was threatened with destruction, the department, in 1874, constructed upon the beach a cribwork beach protection, 2,200 feet in length, 10 feet wide on top with an average height of 7 feet. This was rebuilt in 1902-3, at a cost of \$4,071.10.

In the fiscal year 1886-7, the department constructed a breakwater off the eastern end of this protection for further protection to the harbour. It was 250 feet long, 21 feet wide on top, with an average height of 20 feet, and a slope, on the seaward end, of $\frac{1}{2}$ to 1, whilst the seaward face and outer end were sheathed with 6-inch timber, well fastened. A cribwork wall or spur, 120 feet in length, was also built along the bank of the north side of the harbour, to prevent the sea from washing away the gravel. Several times repairs have been made to this work. The gravel bank, however, was on the increase and bid fair to cross the harbour, effectually blocking all navigation. It was therefore deemed necessary to extend this breakwater in order to not only stop further additions to the gravel bank but also to wash away the bar which had been forming there. This work has been completed, the work being done by Mr. Thomas P. Charleson, of Ottawa, for the sum of \$11,460. The extension is 180 feet in length, the same width as the former portion of the work, and 36 feet high, at its outer end; it is built of solid, continuous, stone-filled cribwork, of same batter as old work, and sheathed on the outside end and seaward faces with 5-inch hewn timbers, well and thoroughly fastened. This work has already proved its utility, the gravel bar has already been reduced by half.

Spring tides rise here from 33 to 39 feet.

Expenditure during fiscal year of 1905-6, \$5,411.60.

PORT HASTINGS.

Port Hastings, Inverness county, is on the eastern side of the Strait of Canso, two and one-half miles to the northward of Port Hawkesbury.

The appropriation for 1905-06 was towards the construction of a wharf to take the place of a public wharf occupied by the Inverness Railway and Coal Company.

During the year a new examination was made of two proposed sites and a full report was submitted.

PORT HAWKESBURY.

Port Hawkesbury, Inverness county, is on the eastern side of the Strait of Canso, nearly opposite Port Mulgrave.

6-7 EDWARD VII., A. 1907

In 1902-03 and 1903-04, a wharf known as the 'Long wharf' was acquired and reconstructed. In 1904-05 a warehouse was constructed on the outer end of the wharf and an old warehouse near its inner end was repaired and improved for the sum of \$1,979, which was paid out of the appropriation for 1905-06.

During the fiscal year 1905-06, the sum of \$249.77 was expended in repairing and strengthening the retaining wall of the approach to the wharf, and in moving and improving the old warehouse; the improvement included fitting up a second waiting room and two toilet rooms.

PORT HOOD HARBOUR.

The harbour of Port Hood is on the west coast of Cape Breton Island, about twenty miles to the northward of the northern entrance to the Strait of Canso.

The harbour was formerly a secure one, Smith island, which forms its west side, having been connected with the main land by a range of sand hills. In 1893 the sea made a breach through this protection; the opening, at first narrow, was enlarged by the tidal currents with increasing rapidity until it was entirely swept away. The harbour is now unsafe during northerly gales, except in a small cove on the east side of Smith island.

In March, 1902, a report was submitted on the closing of the northern entrance in which the estimated cost of work suggested, varied from \$482,000 to \$291,000, according to design and location.

The amount appropriated for 1903-4 (\$20,000) was for expenditure by days' labour in constructing a portion of a breakwater of brush and stone, with stone talus and covering. Operations were commenced in May and were in progress at the close of the fiscal year ended June 30, when the expenditure amounted to \$2,958.95. This sum was expended in procuring materials and in constructing a work of brush and stone, 28 feet in width on top, at high water level, extending from the mainland 330 feet to 3 feet at extreme low water.

In 1904-5 the sum of \$19,950.44 was expended in extending the brush and stone work 470 feet (800 feet from the mainland) to 6 feet at extreme low water and in placing a talus (on both sides) and a covering of quarried stone.

Of the amount appropriated for 1905-6 the sum of \$9,999.91 was expended in procuring materials and in extending the brush and stonework 188 feet (988 feet from the inner end) to 9½ feet at extreme low water, and in placing a talus on both sides and a covering of quarried stone. Spring tides rise four feet.

PORT HOOD PIER.

Port Hood, the shiretown of the county of Inverness, is on the west coast of Cape Breton island, 20 miles north of the entrance to the Strait of Canso.

A pier on the east side of the harbour, commenced by the provincial government in 1865, was originally 550 feet in length and 24 feet in width, with an 'L' on the south side of the outer end, 100 feet in length and 25 feet in width. It came under the charge of the federal government in 1871, since which time extensive repairs and renewals have been made, including the construction of a new block, 125 by 25 feet, at the outer end, in 1873; the construction of a block, 50 by 32 feet, at the south end of the 'L,' in 1888-9; and the construction block, 71 by 24 feet, at the outer end, in 1889-90. The provincial government work was of square timber, close-faced; the additions and parts reconstructed by the department are of round timber laid open-faced. The pier has been protected on the seaward side, at the outer end, and on the south end of the inner side of the 'L,' by close-piling, and on both sides to within 74 feet of the outer end, by a stone talus.

During the fiscal year 1905-6 the sum of \$600.06 was expended in renewing the floor-stringers and covering, near the inner end, and in renewing close-piling and bal-last at the outer end.

SESSIONAL PAPER No. 19

PORT LA TOUR.

Port La Tour is a fishing and farming settlement, situate 25 miles southwest of Shelburne town, with a population of 800.

The harbour is about four miles long, north and south, and two miles wide, east and west, and has a depth of water from 5 to 7 fathoms. Spring tides rise 10 feet, neaps, 7 feet.

Though the outer harbour is somewhat exposed to the southeast (this being the quarter from which their most severe and destructive gales appear), the inner harbour formerly afforded some measure of shelter and protection to the northward and westward of the sand-flats, lying between Page's island and Swain's point, on which there is from 6 to 8 feet of water at low water ordinary spring tides. Since an unusually heavy storm, some years ago, tore from these flats the thick growth of eel grass with which they were covered, the undertow now washes over them. Vessels, lying at anchor, awaiting a cargo or favourable wind, are in danger of dragging ashore, and the need of a protected anchorage is therefore unquestioned. To most effectually meet this requirement, it was necessary to construct a breakwater, starting from Swain's point and running in a northeasterly direction.

For several years work has been performed upon this breakwater, and in all there was expended \$16,639.63, of which amount the sum of \$5,307.84 was expended during the fiscal year 1905-6.

This work, at the end of June, 1906, was 520 feet in length, with a width of 25 feet on top and a depth or height of 20 feet at the end. It is constructed of large stones, well packed and placed in the embankment, with the top and sides cemented and the end dogged. Besides this, heavy rip-rap has been placed along the seaward face of the work. About \$2,000 worth of timber and iron, to be used in the cribwork extension, are included in the above expenditure.

PORT LORNE.

Port Lorne, Annapolis county, formerly called Port William or Marshall's Cove, is situated on the Bay of Fundy, 32 miles northeast of Digby Gut and 6 miles northwest from Paradise station, on the Dominion and Atlantic Railway. The settlement comprises about 300 people, engaged in fishing and farming.

The breakwater was begun in 1835, at the joint expense of the inhabitants and the provincial government, the outlay on the work up to 1867 being \$16,000. The first work done by the Department of Public Works was in 1873-4, when the breakwater was extended a length of 67 feet. In 1882-4 the work was further extended a length of 100 feet, width 35 feet and height 25 feet. The new block was built close-faced with square timber both inside and outside, and provided with a break 4 feet high. During the next few years several repairs were made. In 1897-8 a reinforcing block was built on the seaward face and outer end of the breakwater, 78 feet long, 37 feet high and 13 feet wide, in addition to other important repairs made.

In 1900-1 the sum of \$2,176 was expended in important repairs. The work done consists of the building, to the full height of the breakwater, of a portion of the buttress on the seaward side, 91 feet long; the rebuilding of 12 feet in length of the top of the main work, immediately shorewards from the main portion of the buttress, and the reflooring of the greater part of the length of 91 feet abreast of the buttress.

In 1902-3 the sum of \$1,198.48 was expended in rebuilding a portion of the shore end of the seaward face of the breakwater, 50 feet long, 15 feet wide and from 6 to 15 feet high; with solid stone-filled cribwork; also in rebuilding a portion of the break on the shore end, 33 feet long, 8 feet wide and from 6 to 10 feet high.

In 1904-5 the sum of \$999.93 was expended in taking down and rebuilding a portion of the shore end of the breakwater, which was very much decayed, and in miscellaneous repairs to the rest of the work.

6-7 EDWARD VII., A. 1907

In 1905-6 the sum of \$757.99 was expended in taking down and rebuilding a piece of the middle of the length of the breakwater, which was much dilapidated. The length of the new piece is 56 feet, it is 26 to 29 feet wide and from 15 to 19 feet high.

The work was transferred to the control of the Department of Marine and Fisheries on June 12, 1889.

Spring tides rise 30 feet.

PUGWASH.

Pugwash is a village of about 1,000 people, situate on the south side of the Straits of Northumberland, 10 miles west of Wallace. Its people are farmers, fishermen and lumbermen. From 15,000,000 to 21,000,000 feet of lumber is shipped from here annually. In 1897 this department constructed a shipping wharf of stone-filled cribwork, 145 feet long, 50 feet wide, with a depth of 16 feet of water at L.W.O.S.T.

During the last fiscal year, the sum of \$1,978.23 was expended on repairs.

These repairs consisted of a complete renewal of the top of the wharf, namely, the plank, guard-rails, and stringers. About 2,000 tons of stone ballast were placed in the work and additional cross-ties inserted.

The change in the mode of shipping lumber from barques and wooden ships to larger steamers, and the fact that the port of Pugwash is open only about seven months in the year to navigation, together with the large amount of lumber to be shipped from this port, made necessary more adequate shipping facilities; therefore this department decided to build a new wharf. During the last fiscal year, a contract was let to Messrs. Elliott & Co., for the construction of the new wharf, for the sum of \$11,495. Up to June 30 the work had not been begun, though most of the material had been provided.

Total expenditure during 1905-6, \$2,106.93.

RAYS CREEK.

Rays Creek, Annapolis county, Upper Granville, is a thickly settled and very rich farming country, situated on the north bank of the Annapolis river, some 4 miles below Bridgetown and about 10 miles above Annapolis.

Within a radius of 3 miles there is a population of 800 to 1,000 people. The nearest public wharf is at Granville Centre, six miles below, built by the department in 1902-3. There are two small dilapidated private wharfs, 1 mile and a quarter above and the other one mile below, but they are small, inconvenient and out of repair.

For the convenience of local trade, the department in 1905-6, expended the sum of \$1,500.65 on the construction of a public wharf of pilework, at Rays Creek, about the centre of the district. The work done under the expenditure was the construction of an approach and the purchase and delivery of the whole of the materials.

Spring tides rise about 30 feet.

RIVER HEBERT.

River Hebert is a small town or village of about 400 people, situate on the River Hebert about 15 miles southeast of Amherst town. The people are chiefly engaged in farming and lumbering, whilst a colliery has been in operation there for the last six years, employing about 250 miners.

In 1898-9 this department constructed a pile-wharf at this place costing \$1,195. The wharf was 82 feet long, 55 feet wide and 10 feet high at the outer end. Where the vessels lie there is probably 15 feet of water at H.W.O.S.T., owing to the precipitous character of the bank. It was constructed of pile trestle bents, whilst the end and eastern side were protected by close-faced piling.

A demand for further extension, up-stream, of this wharf was shown to be necessary and the sum of \$2,000 was appropriated for this purpose. Of this amount the

SESSIONAL PAPER No. 19

sum of \$1,968.89 was expended. The work, instead of being 60 feet long as anticipated was narrowed to about 40 feet and lengthened to 125 feet, so that an additional berth along its side might be utilized by the local freight steamship, which makes this one of their ports of call. The work has been well done but the amount of \$300 is required to complete this wharf.

ROUND HILL.

Round Hill, Annapolis county, is a thickly settled and very prosperous farming district, situated about 8 miles east of the town of Annapolis. There is a station on the Dominion Atlantic Railway, and the village with a population of about 500 people, is situated from a quarter to half a mile to the south of the Annapolis river, which is navigable at high water for large vessels as far up as Bridgetown, some seven miles farther up.

Some thirty years ago, a small wharf of cribwork was built by private enterprise, but it fell into disuse about fifteen years ago. At the present time, all that remains of it consists of a few logs and a little pile of ballast.

For the benefit of local trade, the department, in 1905-6, expended the sum of \$2,000.14 in the construction of a public wharf. At the close of the fiscal year the work was about two-thirds completed. It consists of a pilework stem, 76 feet long by 25 feet wide, from 5 to 10 feet high, terminating in a substantial block of stone-filled cribwork, 75 feet long, 35 feet wide and from 16 to 22 feet high, founded on piles driven to hard bottom and cut off level with the mud. Along the face of the wharf at high water there will be about 16 feet of water.

Spring tides rise about 30 feet.

SANDFORD.

Sandford, Yarmouth county, (Cranberry Head) is situated on the Atlantic coast of Nova Scotia, at the extreme western point of Yarmouth county, 7 miles northwest from the town of Yarmouth. The settlement in the neighbourhood, which has for some years been known as Sandford, has a population of from 300 to 400 people engaged in fishing and farming.

In 1858, a breakwater was begun by the inhabitants aided by the provincial government. In 1876, the sum of \$2,000 was expended by the department in extending the work 150 feet. In 1878-9, the sum of \$1,000.08 was spent in constructing an additional length of 50 feet and in repairing the older portion. In 1880, the sum of \$499.96 was expended in repairing the damage done by the storm of August, 1879. In 1883-4, \$100 was expended in resheathing the outer end and in a few minor repairs. In 1885-6 some slight repairs were made to the outer face of the breakwater at a cost of \$768.74. In February, 1892, two serious breaches were made in the work by heavy gales, and a quantity of gravel was driven through into the little boat harbour inside.

In 1898-9, the sum of \$3,497.25 was expended in partially rebuilding the shoreward portion of the work on a new site, which was rendered necessary by the altered configuration of the beach and the remaining outer block was thoroughly repaired. The new work, of which a length of 200 feet was built during the year, starts at the shore, at a point 350 feet eastward of the point where the former work began, and it was built in a northwesterly direction towards the outer block of the old work, with which it was connected. Besides the portion of the breakwater built that year, a small boat channel, about 40 feet long and 8 feet deep, was excavated through the beach, under the lee of the breakwater, to give access to a salt water pond which forms a valuable shelter for fishing vessels during the heavy gales in the winter season.

In 1899-1900, the sum of \$2,599.96 was expended in completing the rebuilding of the breakwater begun last year, the portion of the work built being 81 feet long and 26 feet wide, with an average height of 12 feet. A piece of beach protection work,

6-7 EDWARD VII., A. 1907

240 feet long, 10 feet wide and 6 to 8 feet high was also built in a westerly direction from the shore end of the breakwater to prevent the seas from driving the gravel of the beach into the little pond which shelters the boats of the fishing fleet. In 1900-1, the sum of \$149.92 was expended in replacing the ballast that was washed out by the heavy storm of October, 1900, from the beach protection work adjoining the breakwater on the west side, and to prevent a recurrence of the damage, it was covered with poles.

During the year 1901-2, the sum of \$2,542.18 was expended in extending the breakwater a distance of 90 feet. The new block is 26 feet wide and from 20 to 25 feet high, thoroughly built of round-log cribwork, close-sheathed on the outer end and seaward face, filled with ballast and provided with a break 5 feet high.

In 1902-3, the sum of \$1,004.47 was expended in extending the breakwater by a block 30 feet long, 25 feet wide and 25 feet high, strongly built of round-log cribwork, filled with ballast and close-sheathed on the seaward face and outer end.

In 1905-6, the sum of \$1,258.97 was expended in constructing a small breakwater on the northern side of the little harbour, formed by the stream mouth, for the purpose of excluding the gravel from the schooner berth. The work is 110 feet long, from 19½ to 21 feet wide and from 8 to 12 feet high, substantially built of round-log cribwork of the usual type.

SCOTT'S BAY.

Scott's Bay, King's county, is on the south side of Minas channel, Bay of Fundy, between Cape Split and Baxter's Harbour. The population of the settlement, within a radius of a couple of miles, is about 500.

In 1878-9, the department built a block of cribwork 50 feet long, 30 feet wide and about 20 feet high, connected with the shore by a double row of close-piling, 210 feet long, from the southeast corner of the block; the cribwork was built of close-faced work, well fendered and ballasted. The work was located on the west side of Jess Creek, and formed a harbour or shelter for vessels during southwest storms.

As it had no floor, much of the ballast has been removed, presumably for ballasting schooners. Both the block and close-piling are more or less dilapidated, 30 feet in length of the close-piling and the upper 15 feet in height of the block being totally destroyed. The expenditure on this block and the close-pile work by the department from 1867 to 1882 was \$3,000.

In 1900-1, the department expended \$500 in building two blocks of cribwork, one on either side of the mouth of the creek. The northern block is 115 feet long, 15 feet high and 19 feet wide; also in extending the south breakwater by a block 75 feet long, 10 to 12 feet high and 12 feet wide. Some minor repairs were also made to the older portion of the northern breakwater.

In 1903-4, the department expended the sum of \$1,342.52 in further improvements. The work done consists of the construction of a new block of cribwork in extension of that built in 1901-2, 57 feet long, 20 feet wide and from 16 to 21 feet high, also in raising to full height and finishing the new block on the south side of the creek, begun in 1901-2.

In 1904-5, the sum of \$999.09 was expended in constructing a new block of cribwork, 57 feet long, 20 feet wide and 18 feet high, in extension of the breakwater on the south side of the mouth of the stream; a small cross block on the shore end of the same work, 50 feet long, 10 feet wide and 8 feet high, also a small cross block on the shore end of the north breakwater, 50 feet long, 10 feet wide and 12 feet high, together with fenders and a top course of logs on the portion of the new work built last year on the south side of the creek.

In 1905-6, the sum of \$2,089.96 was expended in building an extension to the north breakwater. The new block is 70 feet long, 20 feet wide and 20 feet high, well filled with ballast and close-sheathed on the northern side and outer end.

Spring tides rise about 48 feet; neaps about 40.

SESSIONAL PAPER No. 19

SEASIDE.

Seaside, Inverness county, is on the east side of St. George's Bay, near the southern entrance to Port Hood harbour, and about two miles west from Port Hood.

The wharf at this place, undertaken in 1895-6 and completed the following year, is 300 feet in length and 20 feet in width on top, of open-faced cribwork, close-fendered at the outer end, and fully ballasted. The substructure is of creosoted and the superstructure of native timber. The depth at the outer end, at extreme low water, is 7 feet. Spring tides rise 4 feet.

About one year after its completion, ballast went out of some of the face-chambers at the outer end, between the bottom timbers and the uneven ledge rock on which the work is founded, subsequently there was a further loss of ballast, and in the spring of 1904, the work was moved by ice from the south, 11 feet out of line at the outer end, the movement commencing 74 feet from the outer end.

In 1904-5, the sum of \$249 was expended in filling the outer end face-chambers with concrete to low water level, and above that level with ordinary ballast.

During the fiscal year 1905-6, the sum of \$639.74 was expended in replacing the concrete and ballast in the face-chambers, at the outer end of the work and in general repairs.

SHELburne HARBOUR.

This is probably one of the finest harbours in Canada, but the people using it are situated at the extreme head, where there is a shoal which caused much trouble.

Some dredging and stone blasting was done during the last fiscal year, but the work is not yet completed.

Total expenditure in 1905-6, \$2,664.09.

SKINNER'S COVE.

Skinner's Cove, Pictou county, is on the western side of Northumberland strait; about 4 miles east of Cape John, and about 20 miles northwest of the entrance to Pictou harbour. A pond at the head of the cove is separated from the sea by a beach of sand, 250 feet in width and 600 feet in length.

On January 5, 1905, a contract was entered into for the sum of \$10,950 for opening a channel through the beach, into the pond, and for the construction of protection works.

The work under contract included the excavation of a channel 15 feet wide at the bottom and 425 feet long to a depth of $2\frac{1}{2}$ feet at low water; and the construction of piers of brush, stone and piles, 304 feet in length and 15 feet in width on each side, and of a cribwork block 40 feet in length and 20 feet in width, with creosoted substructure at the outer end of each pier. Spring tides rise 7 feet.

At the close of the year 1904-5, the outer blocks were completed with the exception of the placing of the cap timbers, upper fenders and sheathing, and 40 piles in inner work were in place.

During the fiscal year 1905-6, the work under contract was completed with the exception of part of the dredging, and some extra work was performed including the extension of the piers on each side of the channel inwards 40 feet; the placing of additional close-sheathing for a length of 144 feet on the seaward side and at the inner end of the western pier.

The expenditure during the last fiscal year amounts to \$7,763.95.

SLUICE POINT.

Sluice Point, Yarmouth county, is a neck of land or promontory, situated about 16 miles southeast from the town of Yarmouth, having on the west the waters of the

6-7 EDWARD VII., A. 1907

mouth of the Tusket river, and on the east those of Tusket bay. The settlement comprises, within a radius of about a mile and a half, a population of 400 people engaged in fishing and farming.

For the benefit of local trade, and to enable the inhabitants to land sea-manure, fish and general merchandise, the department in 1905-6, expended the sum of \$1,178.75 in constructing a small wharf. The work consists of a stone embankment approach, 100 feet long, 30 feet wide and from 3 to 12 feet high, finishing with a block of substantial cribwork, 20 feet long, 30 feet wide and from 12 to 14 feet high.

Spring tides rise about 12 feet.

SUMMERVILLE.

Summerville, Hants county, is a village of some 400 to 500 people, situated on the right or east bank of the Avon river, about midway between Windsor, the county town of Hants, and the mouth of the river where it empties into the Basin of Minas. It is about four miles south of Cheverie. The prosperity of the place is chiefly due to ship-building, which up to a few years ago was carried on with vigour and success, but since the decline in that industry the inhabitants have turned their attention to farming, to which the district is well adapted, though there is still a good deal of general ship-repairing done in the yards.

The public wharf was built in 1866 by the inhabitants aided by the provincial government, its dimensions being 275 feet long, 29 feet wide and 20 feet high at the outer end. It is constructed of the ordinary round-log cribwork, well fendered and filled with ballast.

In 1886-7, the work having become almost useless for want of renewals and repairs, Messrs. Churchill & Sons, of Hantsport, who owned and operated a small steamer making semi-weekly (now daily) trips between Avon river and Minas Basin ports, repaired the outer end and built an extension about 36 feet long and 25 feet wide, having on the eastern side an inclined landing for the use of the steamer when lying alongside at low water.

In 1890 the department expended the sum of \$3,414.52 in removing and rebuilding the decayed top of the work to a height of six feet, besides placing new fenders along the whole length and making general and much needed repairs. The work is now 24 feet high at the outer end, with 21 feet of water at H.W.O.S.T. Spring tides rise 48 feet; neaps, 40 feet. In 1897-8 the sum of \$100 was spent on a few urgent repairs to the floor.

In 1899-1900 the sum of \$602.08 was expended in renewing the whole floor with guards, planking and stringers, besides bolting into position a number of new fenders.

In 1904-5 the sum of \$1,532.76 was expended in extending the public wharf by a new block. The work was completed in the fiscal year 1905-6 by a further expenditure of \$2,618.78. The new block was 80 feet long, 25 feet wide, and of an average height of 30 feet, substantially built of round-log cribwork, filled with ballast and well fendered. A freight shed, 20 feet square, was also built for the convenience of local trade.

This work, like Western Head, is a permanent stone and concrete structure. For description see Annual Report of 1904-5. The end of this work at one corner had two large stones displaced, and the sum of \$132.40 was expended in replacing same and strengthening the corner by the addition of many more iron dogs connecting the different frontal stones.

Total expenditure during 1905-6, including balance of contract, \$2,918.78.

SYDNEY QUARANTINE STATION.

The quarantine station in Sydney harbour, is on the southern arm, near Keating point and about three-quarters of a mile from Point Edward, at the eastern extremity of land lying between the south and west arms.

SESSIONAL PAPER No. 19

A wharf, built by the Department of Marine and Fisheries, and repaired and extended in 1902-3, consists of a block and span structure, extending 148 feet to 8 feet at low water.

Spring tides rise 5 feet.

In 1903-4, the sum of \$1,551.52 was expended in procuring creosoted timber and other materials to be used in repairing and extending the wharf.

The old wharf having fallen into such a dilapidated condition as to render its reconstruction and extension inadvisable, the appropriation for 1904-5 was made for expenditure in constructing a new wharf, using materials procured in 1903-4. During the year, \$1,667.66 of the amount appropriated was expended in procuring the additional materials required in the construction of a wharf to extend 173 feet to 10½ feet at low, or 15½ feet at high water, consisting of an inner and four intermediate blocks, 14 feet in width, and an outer block, 20 feet in line of work by 40 feet, and in constructing the inner and three intermediate blocks.

During the fiscal year 1905-6, the sum of \$1,098.97 was expended in completing the work in progress in 1904-5.

TATAMAGOUCHE.

Tatamagouche, Colchester county, is a seaport town on Northumberland strait, thirty miles from Truro. It is also an important station on the Intercolonial short line running from Oxford Junction to Pictou. It has a population of 1,200, and contains twenty stores, two hotels, post office, telegraph office, two saw-mills, tannery, woodworking factory and a grist mill.

During the fiscal year 1905-6, the department expended the sum of \$1,616.43 in the construction of a cribwork wharf. The work, when finished, will consist of a cribwork wall, 10 feet in width on the sides to 20 feet in width on the outer face, surrounding the old cribwork and stonework wharf. The new work will be 100 feet long, 62 feet wide, and, at the outer end, 14 feet high, with a depth of water of 12 feet.

Spring tides rise 6 feet, neaps, 5 feet.

THREE FATHOMS HARBOUR.

Three Fathoms harbour, Halifax county, is an irregular shaped inlet of the sea, about one mile in maximum length from north to south, by one-quarter to three-quarters of a mile wide. It is situated about fifteen miles east of Halifax harbour. The harbour is much frequented and used by fishermen from the contiguous settlements of Seaforth and East and West Chezzetcook, containing, in the aggregate, a population of some 500 or 600 people.

To prevent the sea from breaking through the narrow shingle beach that separates the harbour from the Atlantic, the department, in 1878, constructed cribwork along the crown of the beach. Its original length of 1,050 feet has been extended to 1,085 feet, its height is from 4 to 8 feet, and its width 13 feet. It is built of round-log work, fendered and ballasted.

In the fiscal year 1901-2, the sum of \$1,189.91 was expended in taking down and rebuilding a length of 120 feet on the northern end of the work, which was in a state of dilapidation.

In 1902-3, the sum of \$1,785.57 was expended in repairs and improvements. The work done consisted of the thorough repair and rebuilding the top of 250 feet in length of the beach protection, and the construction of a new block on the northern end, 84 feet long, 12 feet wide and 11 feet high. The total expenditure by the department up to June 30, 1903, was \$9,090.66.

In the fiscal year 1905-6, the department expended the sum of \$1,117.29 in tearing down and rebuilding a length of about 80 feet of the old work and in making other repairs.

Spring tides rise 6½ feet, neaps, 5½ feet.

TIVERTON.

Tiverton, Digby county, is a village of some 400 people, mostly engaged in fishing, but doing also some little farming, situated on the west side of Petit Passage, separating the mainland of Digby Neck from Long island. It is about thirty miles southwest of Digby town, and ten miles from Sandy Cove.

On February 12, 1903, a contract in the sum of \$17,000 was awarded by the department for the construction of a breakwater, to afford shelter to the fishing fleet. This work, which was completed in January, 1904, is 281 feet long, 30 feet wide on top, and, at the outer end 33 feet high, where at H.W.O.S.T. there is about 29 feet of water. The whole is substantially built of round-log cribwork, the lower portion up to 5 feet above low water ordinary spring tides being of creosoted timber, to resist the attacks of the limnoria.

In 1905-6, the sum of \$48.98 was expended in bolting on to the outer end of the breakwater five hardwood fenders, and in cutting off and driving in or replacing a number of bolt-heads, that chafed the sides of the steamer that makes semi-weekly calls.

TONEY RIVER.

Toney River, Pictou county, is a small stream emptying into the Northumberland strait, about midway between Pictou harbour and Amet sound.

The appropriation for 1905-6 was for expenditure in opening a new channel through the beach obstructing the entrance, and toward the construction of the necessary protection works.

The works undertaken were the excavation for the channel and for foundations of the protection works to 1 foot below extreme low water, over a width of 70 feet, and the construction of protection works on the east and west sides respectively, 201 and 145 feet in length, each 14 feet in width, to within 32 feet of the outer end and 20 feet in width over the outer 32 feet, of cribwork fully ballasted and with face and ends of the outer 32 feet sheathed with hardwood. The top of the covering to be 4 feet above extreme high, or 10½ feet above extreme low water.

During the year the sum of \$4,727.55 was expended in procuring the timber and iron required in the protection works and in construction. On June 30 the protection work on the east side was completed, with the exception of placing the floor-stringers, covering and fenders, and 95 feet of the substructure of the work, on the west side, was in place and ballasted.

NOTE.—The channel and protection works were completed, August 30.

TRACADIE.

Tracadie harbour, Antigonish county, is on the southern shore of St. George's bay, eleven miles west from the northern entrance to the Strait of Canso.

The works here consist of a breakwater on the eastern side of the entrance to the harbour, and of a breastwork in extension of the breakwater inward and along the beach to the southward of it, to prevent scouring and undermining of the bank by tidal currents.

The breakwater extends a distance of 120 feet out to the edge of the channel, thence along the line of channel, outwards, a distance of 100 feet. The latter section is constructed on the remains of old work, and is 16 feet wide for a distance of 64 feet, 20 feet wide for a distance of 36 feet, and is constructed of round timber with creosoted timber substructure.

During the fiscal year ended June 30, 1906, the sum of \$1,199.57 was expended in the reconstruction of the outer 36 feet of the breakwater, which had been wrecked during a gale and afterwards carried away down to low water. The new work, to a height of 3 feet from the bottom, was constructed with round creosoted timber, the upper portion with round native timber.

SESSIONAL PAPER No. 19

VICTORIA BEACH.

Victoria Beach, Annapolis county, is situated on the north side of Annapolis basin, thirteen miles southwest from Granville ferry, which is on the north side of Annapolis river, directly opposite the town of Annapolis. It is four miles northeast from the town of Digby and about a mile and a half to the northeast of the entrance to Digby Gut. The whole distance from Granville ferry to Victoria Beach thirteen miles, and for another two miles down to Digby Gut, is a thrifty and well settled farming and fishing district.

On June 15, 1904, a contract was entered into between the department and Messrs. Reid & Archibald, of Halifax, in the sum of \$93,890, for the construction of a pile-work pier for general utility and to serve as a terminus for the Middleton and Victoria Beach Railway. The total length of the structure is 1,337 feet, it has a width of 50 feet and a height along the whole length of the ell of 57 feet. The ell is 456 feet long and at L.W.O.S.T. carries a depth of 25 feet of water.

Spring tides rise $27\frac{1}{2}$ feet, neaps, 23 feet.

The pier is constructed of pilework, the bents of seven piles each, being spaced 9 feet apart in the length of the work. The total number of bents is one hundred and fifty-three, of which the piles in the first forty are of native spruce and the outer one hundred and thirteen bents of creosoted Virginia pine. Caps, stringers, braces, walings and guards are all of Georgia pine, the flooring of native spruce 6 inches thick.

With a view of determining the preservative value of carbolineum avenarius, of which the department has used a considerable quantity during the past few years, the pile-head guard timbers, on the shore end of the work, were put on in lengths of from 9 to 18 feet and alternately of different timbers, and differently treated, thus :—

- No. 1. Native spruce painted with carbol. av.
- No. 2. Native spruce boiled in carbol. av. for about two hours.
- No. 3. Georgia pine, boiled in carbol. av., for about two hours.
- No. 4. Georgia pine, painted with carbol. av.
- No. 5. Native hemlock, boiled in carbol. av., for about two hours.
- No. 6. Georgia pine, painted with carbol. av.
- No. 7. Native hemlock, boiled in carbol. av., for about two hours.
- No. 8. Georgia pine, boiled in carbol. av., for about two hours.
- No. 9. Native spruce, painted with carbol. av.
- No. 10. Native hemlock, painted with carbol. av.
- No. 11. Georgia pine, boiled in carbol. av., for about two hours.
- No. 12. Native spruce, boiled in carbol. av., for about two hours.
- No. 13. Native spruce, painted with carbol. av.
- No. 14. Native spruce, untreated.
- No. 15. Native spruce, boiled in carbol. av., for about two hours.
- No. 16. Georgia pine, untreated.
- No. 17. Native spruce, untreated.
- No. 18. Native hemlock, boiled in carbol. av., for about two hours.
- No. 19. Georgia pine, boiled in carbol. av., for about two hours.
- No. 20. Native spruce, untreated.

The whole work was satisfactorily completed on July 13.

Total expenditure during the fiscal year ended June 30, 1906, \$30,503.82.

WALLACE.

This work consisted of the extension of two wharfs known as Wallace and North Wallace.

Wallace harbour is situated on the south side of the Strait of Northumberland, about midway between Pictou harbour and Bay Verte. It is at the mouth of Wallace river, and well protected from all winds. On the north side of the harbour is scattered a population of about 1,000 fishermen and farmers, whilst on the south side is

6-7 EDWARD VII., A. 1907

the village of Wallace, with about 800 people. As the railway is situated about two miles south of Wallace, the people of the north side need adequate ferry accommodation for the necessary receipt and transmission of supplies and products, and for the last fifty years the government has been assisting them. About that time there was a small ferry landing wharf constructed by provincial authorities on the north side. In 1889-90-1, this department constructed a larger wharf on the north side, 345 feet in length, and with the exception of the last 20 feet, which is 40 feet wide, the common width is 20 feet. This wharf was constructed of stone-filled continuous cribwork. In 1897, this department, at a cost of \$2,329, constructed a wharf on the south side, 320 feet long and 18 feet wide, the first 170 feet being constructed of block and span work, whilst the last 150 feet is constructed of pile-trestle bents.

The distances from the heads of these wharfs to the edges of the channel was 1,420 feet from the north to the channel, and 225 feet from the south to the channel, with a channel 750 feet in width. Between these wharfs and the channel are mud-flats, and at half tide the ferriage was not possible. Dredging along the sides and to the channel was performed, but the dredged spaces on both sides soon became filled up so that its usefulness became impaired. To extend these wharfs was therefore the only other expedient which could be foreseen, so that after examination the sum of \$16,000 was estimated as being necessary for this object.

During the fiscal year 1904-5, the sum of \$3,980.06 was expended in partially extending the north wharf, and during the last fiscal year the sum of \$6,108.77 was expended upon the north extension and \$3,980.09 upon the south wharfs. The north wharf was practically completed, whilst the south wharf was over half completed on June 30, 1906.

The north wharf consists of pile-trestle bents situated 10 feet apart longitudinally, with the exception of the head, which owing to its situation and increased rate of flowing currents, with winter ice, &c., was constructed of cribwork, 20 feet long and 40 feet wide. There is also a ferry slip, 100 feet in length and 15 feet wide, for the convenience of ferriage at all times of tide.

The south wharf, when completed, will be extended 225 feet, with the same width as the old wharf, and with a ferry slip at its outer end, 90 feet long and 12 feet wide, with a guard of cribwork 3 feet wide, for protection from drifting ice. It is being constructed of solid cribwork, because of the soft mud resting on a reef, the mud being of such consistency as to render it practically impossible to hold piles in position. The teredo here is very active, but most of this work being at or near L.W.O.S.T., the expense incurred by using creosoted timber is practically annulled by the fact that protection to pilework can be better procured by sheathing the bottom 2 feet of the piles with metal covering. The piles are hemlock, and no trouble is anticipated this year from the worms.

Spring tides rise here 7 feet; neaps, from 4 to 4½ feet.

WEST ARICHAT BREAKWATER.

West Arichat, Richmond county, is a small but safe harbour on the west side of Isle Madame, sheltered from the south and west by Creighton island and by a breakwater between it and Isle Madame.

The breakwater is 1,211 feet in length and 24 feet in width, of round timber, open-faced and fully ballasted. The top of the covering is 11 feet above the bottom, which dries at low water, except near a 25 feet opening, 588 feet from the west end.

The appropriation for 1904-5 was for renewing the floor-stringers and covering in places, and for repairs on each side of the opening, including repairing and strengthening the work on the west side and reconstructing a portion of the work on the east side. Part of it (\$886.46) was expended in procuring the materials required, including 20,180 feet B.M. of 3-inch covering, and in reconstructing the work on the east side of the opening.

During the fiscal year 1905-6, the sum of \$542.98 was expended in completing the repairs undertaken in 1904-5.

SESSIONAL PAPER No. 19

WEST ARCHAT WHARF.

On August 30, 1905, a contract was entered into with Mr. Thomas Morrison of d'Escousse, in the sum of \$5,275, for the construction of a wharf at Bosdet Point, on the northern side of the entrance to the harbour.

The work under contract consists of a block and span wharf, 88 feet long and 20 feet wide, with an 'L' on the eastern side of the outer end, 28 feet long and 24 feet wide; and of cribwork approach, 300 feet long and 16 feet wide, to connect the wharf with the public road. The blocks in the wharf are to be built of round timber with creosoted timber substructure, properly ballasted and fendered, and the outer faces of the outer block are to be close-sheathed between the fenders.

The work of construction was commenced early in June, 1906, and by the end of the fiscal year, the cribwork approach was completed.

The expenditure during the last fiscal year amounted to \$1,526.22.

WESTERN HEAD.

A stone on the inside face and near the bottom of this breakwater, removed by action of the undertow, was replaced. A small break in the outer end has been temporarily repaired with square timber.

Total expenditure in 1905-6, \$49.10.

WEST PUBNICO.

West Pubnico, Yarmouth county, is situated thirty miles southwest of Yarmouth; it is about eight miles long from mouth to head, lying due north and south, and from three-quarters of a mile to a mile and a half wide.

On the west side of the harbour and about three miles above its mouth, a wharf was built by the department in 1885-6-7. The work consists of a stone and gravel causeway, 285 feet long, followed by a wharf 230 feet long, of pile bents. The bank is 25 feet wide by an average height of 5 feet; the wharf is of the same width and from 10 to 14 feet high. At low water ordinary spring tides the mud flats are bare for over 1,000 feet beyond the end of the wharf.

In 1900-1, the sum of \$2,025 was expended in repairs and extensions, the work done being as follows:—

(a) The raising and gravelling of the stone approach, 290 feet in length. Many of the top stones, which had been displaced, were renewed, and from 6 to 18 inches of fresh gravel was laid.

(b) The thorough repair of the older portion of the work, comprising new fender-piles, guard-timbers and traverse bracing. The whole of the floor was taken up and relaid; about one-half of it with new plank.

(c) The construction of an extension 167 feet long of equal width and similar construction with the old work, viz.: 25 feet wide and of pile-bents. The outer end of the work, which is all pilework, is now 15 feet high, carrying a depth of water of about 12 feet at high water ordinary spring tides.

(d) The placing of three dolphins, consisting of 4 piles each, from 500 to 1,200 feet distant from the wharf to mark the positions of rocky ledges. The piles forming each dolphin are strongly chained and bolted together at the top and painted.

The total length of the pilework is now 397 feet.

In 1903-4, the sum of \$98.12 was expended in lowering back into place about 50 feet in length of the shore end, which had been lifted by ice the previous winter.

In 1905-6, the department expended the sum of \$1,198.83 in rebuilding 135 feet in length of the shore end of the wharf. The piles in the old work not being properly driven, owing to hard bottom, the ice of the winter of 1904-5, lifted this portion of the work and made it quite useless. The new portion is substantially built in block and span work. It is 135 feet long, 25 feet wide and from 7 to 14 feet high.

6-7 EDWARD VII., A. 1907

WEST QUODDY.

West Quoddy, Halifax county, is a scattered settlement of about 300 people, situated on the south coast of Halifax county, eighty miles east from the city of Halifax and five miles west of Salmon river. It has a post office, two stores and fish-packing establishment. The principal occupations of the people are fishing and farming. The total value of the catch is estimated at \$17,000 per annum. During the fiscal year 1905-6, the department expended the sum of \$386.75 in the purchase of material for the construction of a pile-wharf. The work will be completed next year.

Spring tides rise $6\frac{1}{2}$ feet, neaps, 5 feet.

WEST RIVER, SHEET HARBOUR.

West River, Sheet Harbour, Halifax county, is situated on the Atlantic coast of Nova Scotia, in the eastern part of Halifax county. The village, which surrounds the harbour, contains a population of about 600 persons, and is a thrifty and prosperous community, engaged in farming and fishing. The harbour is one of the finest in Nova Scotia, being of considerable extent, and having an abundant depth of water. It runs inland about six and a half miles to Jared's point, where it divides into two arms, receiving respectively the waters of the East and West rivers.

During the fiscal year 1905-6, the department expended the sum of \$2,205.15 in building a cribwork and pile-wharf in the mouth of the West river. The work, which is not yet completed, will be 180 feet in total length, with an 'L' 86 feet in length and 20 feet in width of cribwork, stone-filled. The stem of the wharf, of pilework, will be 25 feet in width and 141 feet in length. The wharf will be 22 feet in height at the outer end, where there will be a depth of water of 16 feet at L.W.O.S.T.

Spring tides rise $6\frac{1}{2}$ and neaps $5\frac{1}{2}$ feet.

WEYMOUTH.

Weymouth, Digby county, the second largest town in the county, with a population of 1,200 people, is situated twenty miles southwest from the town of Digby. It is on the Sissiboo river, two miles from its mouth. Some four or five million feet of lumber are annually shipped to South America and other ports, and a considerable trade is done.

In 1905-6, the department expended the sum of \$658.01 in constructing, in the public dock on the north side of the river immediately below the highway bridge, a pilework inclined boat slip, 50 feet long, 12 feet wide and from 3 to 5 feet high, with a stone bank approach 50 feet long and from 1 to 5 feet high. An old block of cribwork, which obstructed the entrance to the public dock, was also removed.

WHITE HAVEN CANAL.

White Haven, Guysborough county, one of the finest harbours in Nova Scotia, is on the south or Atlantic coast, fourteen miles to the westward of Cape Canso.

In 1854, the residents, with some aid from the provincial government, undertook the construction of a canal for boats through a low and narrow isthmus between Marshall Cove, three miles within the entrance, and Witch Cove, at the eastern extremity of Torr bay. On the completion of improvements made in 1876, it was 620 feet in length and from 10 to 12 feet in width; the bottom was about one foot above extreme low water, or 4 feet 6 inches below the level of extreme high water. Prior to 1884, the walls had become delapidated, the southern entrance was blocked with sand, and the channel inside filled with sediment and washing from the slope.

In 1894-5 repairs and improvements were made by the department with the object of obtaining ultimately a uniform depth at extreme low water of one foot and width between retaining walls of 12 feet. The repairs and improvements effected included the removal of 160 feet of old retaining wall, on each side at the south end, and the

SESSIONAL PAPER No. 19

construction of walls 10 feet wide on top, of which 20 feet at the outer end on each side are of cribwork, and the remaining 140 feet of brush and stonework; temporary repairs to the retaining walls on both sides, from 160 to 270 feet from the south end, and on the east side, from 328 feet to 480 feet from the south end; the construction of new walls on each side from 480 to 500 feet from the south end as foundations for bridge abutments; built by the municipality; the reconstruction of 100 feet of wall on the west side 500 to 600 feet from the south end; the construction of 141 feet of temporary wall on each side (600 to 741 feet from the south end), and deepening from end to end within 3 to 6 inches of extreme low water.

In 1900-1 and 1901-2 the sum of \$2,686.53 was expended in continuing the repairs and improvements undertaken in 1894-5. The work performed comprised the construction of 137 feet of brush and stone retaining wall on each side, 160 to 297 feet from the south end, the removal of the old retaining wall on the west side, 528 to 740 feet from the south end; and on the east side 588 to 740 feet from the south end; the construction of a new retaining wall 583 feet in length on each side, 187 to 750 feet from the south end and deepening between the retaining walls to about one foot at low water.

In 1902-3 the sum of \$799.25 was expended in constructing 80 feet of brush and stonework on each side, 750 to 830 feet from the south end, thus completing the work undertaken, with the exception of a cribwork retaining wall, 20 feet in length on each side at the north end.

In 1903-4 the sum of \$500.75 was expended in nearly completing the cribwork retaining walls at the north end.

During the fiscal year 1905-6 the sum of \$100 was expended in completing the cribwork retaining walls, 20 feet in length, on each side at the north end, undertaken in 1903-4.

WHITEHEAD WHARF.

Whitehead, Guysborough county, is a fishing settlement on the western side of White Haven, one of the finest harbours on the southern, or Atlantic coast of Nova Scotia, situated about fourteen miles to the westward of Canso harbour.

The sum of \$4,100 was appropriated during 1904-5, on the construction of a public wharf at Whitehead, and a plan and specification for the proposed work were prepared. The wharf was to be a block and span structure extending 168 feet, to 16 feet at low water, and 20 feet wide, and consisting of a stone approach, 60 feet in length, of two central blocks, each 20 feet in length, and of an outer block to form a 'T' head, 20 feet in line of work, and 60 feet in length.

In the autumn of 1904, arrangements were made for the delivery of the necessary materials early in the spring of 1905, but as the timber, which had to be brought from Guysborough could not be delivered by the end of the fiscal year, out of the amount granted, the sum of \$880.23 only was expended during the year, and with that amount the stone approach was built and all the iron required was obtained.

During the fiscal year ended June 30, 1906, the sum of \$3,344.94 was expended in procuring the materials, in completing the wharf, as intended, and in constructing a warehouse 18 by 30 feet, on the southern side of the inner end of the approach.

WHITE POINT.

White Point is a fishing settlement on the Atlantic coast, situate six miles south of Liverpool town.

Many years ago a structure was built of stone-filled cribwork, 180 feet long, from 10 to 20 feet wide on top, and about 13 feet high at the outer end. It was constructed by the provincial government. On the seaward side it was close-sheathed with a sloping face and protected from the violence of the seas by a quantity of heavy stone riprap.

6-7 EDWARD VII., A. 1907

In 1878-9, this department expended the sum of \$4,000 in building an addition 80 feet in length, but two years afterwards, 33 feet of this new work was destroyed by a heavy gale.

In 1885, the sum of \$900 was expended in repairing the landward or northern side of the remaining portion of the outer block, and in removing a quantity of large boulders from the same side, that interfered with the entrance of boats. A quantity of heavy rip-rap was also placed along the seaward side, to break the force of heavy seas.

In 1893, the sum of \$350 was expended in making much needed repairs. The work done consisted of the practical rebuilding of 10 feet in length of the outer south corner, as well as new planking and sheathing, besides placing some rip-rap on the seaward face.

In the year 1898-9, the sum of \$901.96 was expended in practically rebuilding the major portion of this breakwater and removing many large rocks and stones from the inner dock besides dynamiting a ledge which prevented safe landing in time of stormy weather.

During the last fiscal year, a further sum of \$579.08 was expended in effecting further repairs. The old break on the shoreward portion of the work was renewed and raised 1 foot higher. The entire covering of the work was renewed. About one-half of the sheathing was replaced and the outer half of the work was relagged for a height of four feet, and practically reballasted.

WOLFFVILLE.

Wolfville, King's county, is a town of about 2,000 inhabitants, situated on the right bank, and near the mouth of the Cornwallis river, which issues into the Basin of Minas, at its southwest corner. It is an important station on the Dominion Atlantic Railway, half way between Annapolis and Halifax, sixty-six miles from Annapolis, and seven miles east of Kentville, the county town of King's.

In 1900-1, the department, at a cost of \$6,360.50, built, by contract, a public wharf on the right bank of the river, near its mouth, at a distance of about half a mile from the town. The approach consists of earth-work, an embankment 144 feet in length, 25 feet wide and of an average height of 5 feet. The wharf itself, which was substantially built of pilework, was 152 feet long, 36 feet wide, including an inclined slip on the south side, 10 feet wide. It has an ell on the outer end 82 feet long, giving a total face length on the river channel of 116 feet; the ell is 40 feet wide and is from 48 to 49½ feet in height, along the face, giving a depth of water at H.W.O.S.T. of about 46 feet. At L.W.O.S.T. the river channel carries a depth of from 4 to 5 feet of mostly fresh water.

In 1902-3, the channel of the river moved shorewards, owing to erosion, a distance of some 20 or 30 feet, causing the two outer rows of piles of the wharf to lose more than half their hold in the mud and sand. In consequence of this, it became necessary to build cribwork in the spaces between the two outer rows of piles, at the end of the ell and at the opposite end of the wharf alongside the inclined slip. This mode of treatment being insufficient and the scour continuing, it was decided to remove the outer 20 feet in width for the whole 118 feet in length of the wharf and rebuild it on the inner side of the ell. The work was begun on October 1, 1903, and vigorously carried on until December 24, when owing to the severity of the weather and the rapidly accumulating ice, operations were suspended.

The winter of 1903-4 was the severest known for a great many years. Ice formed in and around the piles of the wharf to a greater weight and thickness than had been known since the wharf was built. The floating power of the ice, added to the reduced hold of the piles in the bottom, from the erosion of the channel, caused the whole ell to be lifted up by an exceptionally high tide, of March 3, 1904, to a height of from 5 to 8 feet. A few days later the whole outer portion of the wharf, including the ell, was carried away and destroyed.

SESSIONAL PAPER No. 19

In 1903-4 the sum of \$1,768.89 was expended in above alterations and improvements, and, after the destruction of the wharf, in saving such of the timber as was possible.

In 1904-5 the sum of \$78.80 was expended in saving and booming old timber from the destroyed pile-wharf, and the sum of \$2,563.41 in beginning the construction of a substantial cribwork wharf in its place. At the close of the fiscal year the work was about one-third completed.

Spring tides rise 48 feet, neaps, 40 feet.

In 1905-6 the sum of \$4,310.13 was expended in completing the construction of a new wharf of cribwork, in place of the old one of pilework destroyed by ice. The wharf is a solid block of cribwork, with a stem 50 feet long by 28 feet wide and from 14 to 29 feet high. The ell, on the outer end, is 100 feet long, 28 feet wide, and 29 feet high along the whole face, where at high water there is 25 feet of water. Along the front of the ell there has been built a platform 110 feet long and 25 feet wide, with its top 29 feet below the floor of the wharf, for the purpose of permitting vessels to lie at the wharf during low water. The platform is built of piles firmly driven, well braced and capped with 10 by 10 caps.

YARMOUTH BAR.

Yarmouth, the county town of Yarmouth county, is situated at the southwestern extremity of Nova Scotia. It is a thriving and prosperous town of nearly 7,000 inhabitants, and, next to Halifax, the largest and most important town in Nova Scotia proper. It is the terminus of the Dominion Atlantic railway, whose fine Clyde built steamers make regular trips throughout the year to Boston. There are several important manufactories in the place, but the leading business is shipping, of which a larger tonnage is owned here than in almost any locality in Canada.

At low water, Yarmouth harbour, in which spring tides rise 16, neaps 13 feet, consists largely of mud flats covered with eel grass. The harbour is formed by a succession of shingle or gravel beaches (called Stanwood Beaches) aggregating about one mile in length, which connect the northern end of Fourchu island, also about one mile long, with the southern end of Stony Point on the main land, and separate the harbour from the Bay of Fundy.

In 1876, it was found that part of the beach, between Cape Fourchu and Stony Point, was gradually wearing down and unless the action was arrested, the sea would eventually sweep away the beach and destroy the harbour. The government of Nova Scotia began the work of protecting the beach in 1867, constructing 200 feet of cribwork at Stony Point; between 1873 and 1875, the Public Works Department constructed the remaining 2,800 feet of protection work required to reach Cape Fourchu, and added buttresses or groynes to stop the movement of the gravel.

Between 1875 and 1878, the protection works, though substantially built of stone-filled cribwork and close-piled on their seaward faces, had to be repaired and strengthened, the expenditure amounting to over \$25,000.

Between 1888 and 1896, no further works of repair were undertaken on the beach protection, and it became dilapidated and decayed. Breaches were made through it by the sea in various places. During the year 1896-7, the sum of \$2,983.62 was expended in carrying on the most urgent works of repair, and in 1897-8 a further sum of \$3,234.51 was expended in continuing and completing these repairs. This last sum was applied in rebuilding a length of 50 feet on the eastern end, and in constructing a groyne projecting at right angles from the same end, a distance of 175 feet. The groyne is 25 feet wide and 11 feet high, substantially built of round-log stone-filled cribwork. Its object was to protect the beach at the northeastern end of the main cribwork protection, by accumulating the gravel and breaking the waves before they expended their force on the beach. It has admirably fulfilled its purpose, as gravel has accumulated at the junction of the groyne with the main work to a depth of over 14 feet.

6.- EDWARD VII., A. 1907

In 1898-9, the sum of \$300 was expended in repairing a small but serious breach, 25 feet long, in the bottom of the outer face of the beach protection work, and with covering with 3-inch hemlock plank a length of 430 feet of the top of the work, in order to prevent the ballast from being washed out by the waves.

In 1899-1900, the sum of \$970.27 was expended in repairing two or three small but dangerous breaches in the seaward face of the work, and in covering the top for a length of about 670 feet, with 3-inch plank to prevent the sea from washing out the ballast.

In 1900-1, the sum of \$3,389.70 was expended in extensions and repairs.

In 1902-3, the sum of \$120.94 was expended in a few petty and miscellaneous repairs to the beach protection work, the work done comprising the replacing of a few pieces of close-sheathing washed off by the winter seas, the renewal of some flooring and the respiking of loose portions.

In 1903-4, the sum of \$325.57 was expended in building a fence on both sides of the beach protection, 1,250 feet long, for the purpose of making it safe for horse traffic. A few minor repairs to the beach protection work were also made.

In 1904-5, the sum of \$948.32, was expended in general and miscellaneous repairs.

In 1905-6, the sum of \$673.60 was expended in repairing the outer face of the work and in constructing a groyne, about the middle of the length of the beach protection, in order to arrest the gravel and cause it to pile up against and protect the work. The block is substantially built of the ordinary type of cribwork, 30 feet long, 20 feet wide and 14 feet high.

Total expenditure for year ended June 30, 1906, including dredging, \$16,705.17.

PRINCE EDWARD ISLAND.

BLOOMING POINT POND.

Blooming Point pond, Queen's county, situated on the north coast of the island, about a mile from the east end of Tracadie harbour. The pond has in all a length of about one and one-half miles, averaging about one-quarter mile in width. During the spring and summer months, gaspereaux and other fish visit it in large numbers for the purpose of spawning, entering it from Tracadie harbour or bay by a narrow, shallow channel. This channel, at its mouth and in several parts of its course, as it passes through marsh and sand flats, at times when heavy storms occur, gets completely blocked, preventing the fish from passing in or out. During the past year an expenditure of \$271.75 was incurred in clearing out and deepening the channel, from head of Tracadie bay into pond, and making up low sand beach for a length of 3,500 feet with brush hurdles.

CAMPBELL'S COVE.

Campbell's Cove, King county, is on the north side of the island, about nine miles from East Point and fourteen miles northeast from Souris, the eastern terminus of the Prince Edward Island railway. The place was in 1872 selected by the provincial government for the construction of a small breakwater, 300 feet long and 30 feet wide, on the reef that extends from the west side of the cove, its inner end being 70 feet beyond high water mark. Much benefit being derived from the work both by the fishing and farming industries of the district, the Dominion government took over this breakwater when Prince Edward Island entered confederation.

In 1882-3 necessary repairs were made and the work extended 250 feet seawards, the gap, 70 feet long, between its inner end and the shore, was filled in, making the work in all 620 feet in length. This breakwater sheltered a small area carrying a depth of about 4 feet of water at low tides, at 8 feet at high water springs. The re-

SESSIONAL PAPER No. 19

pairs and additions made by the department being of a substantial character, the breakwater remained in good condition up to 1889, when some slight repairs were required; after that date, however, owing principally to the ravages of the 'teredo,' each storm did more or less damage, and notwithstanding the extensive repairs made in 1895, the work continued to suffer each fall and winter; in 1899 a length of 80 feet of the original work was completely carried away, and an adjoining length of 50 feet so badly damaged as to require reconstruction. This latter damage was made good in 1900-1, and outer part of the work, destroyed in 1896, rebuilt in 1901-2. During the severe storm of November 14, 1904, the breakwater suffered some damage to the covering, floor stringers, also washout of ballast, a length of about 50 feet of the seaward face as well was injured.

Materials for necessary repairs were procured during the winter of 1904-5, at a cost of \$471.08, and work commenced in August; 100 feet near the inner end was re-ballasted about 2 feet deep, new floor stringers and covering put on, also about 75 feet of old covering and floor stringers replaced and secured, a new face was built 8 feet high on the north side for a length of 65 feet, beginning 80 feet from outer end; this was also close-piled and the cross-ties and covering renewed. The total expenditure during the past year amounted to \$1,005.64.

CHINA POINT.

China Point pier, Queen's county, is situated on the west side of Orwell river, near its entrance into Orwell bay. Originally built by the local government, its control was assumed by the Dominion government in 1884; it has in all a length of 426 feet, consisting of a shore abutment or approach, 140 feet long, six blocks with intervening spans, and a pier-head fronting 72 feet on the channel, and having a width of 37 feet, carrying at it at low water 15 feet, or 23 feet at high water spring tides that here rise 8 feet.

Being a very old structure when assumed by the Dominion government, reconstruction of its pier-head has been necessary and from time to time repairs of inner portion required, to keep it in passable condition.

During the past season reconstruction of first block and connecting span inward of pier-head was made, material for which had been provided the previous fiscal year (1904-5) at a cost of \$294.77, several repairs were effected to the roadway approach. The total expenditure during the last fiscal year 1905-6 was \$380.88.

COVE HEAD HARBOUR.

Cove Head harbour, Queen's county, is on the north side of the island, about midway between Tracadie and Rustico harbours. Within its entrance, which at low water is about 250 feet wide, the harbour or bay has a length of about four miles, and a width of from half a mile to a mile, receiving the waters of the Black river, and 'Mill,' 'Auld's' and 'McCallum's' creeks. It is navigable over the greater portion of its extent for small vessels and boats, such as can cross the outer bar, where only 3½ feet at low water or 7½ feet at high water springs is carried. The harbour proper commences immediately inward of the entrance, extending westward between the sand beach and what was an extensive sand flat, dry at about half tide, on the western side of which was formerly the main channel, 300 to 400 feet wide, and carrying 5 feet or more of water at low water.

A small channel existed on the east side of the flat, but was shoal and narrow, during late years two other channels opened through the flat, the result being that the western one became nearly closed, and that none of them was good. To improve conditions, a contract was entered into on March 12, 1903, for the construction of a shear dam, 1,575 feet long, to extend in a northwesterly direction, from the southeasterly side, and completely close two of the channels. This work was completed November 23,

6-7 EDWARD VII., A. 1907

1903, at a cost of \$7,103.50. The work consists of a brush bottom with round log open cribwork on top, 12 feet wide, excepting at the outer end where for a length of 20 feet it is 22 feet wide, the interior space of the cribwork is solidly filled in with rock ballast and close laid brush, placed in alternate layers, and sides fender-piled at 10 feet centres while the outer end, on a length of 20 feet, is closed-piled, all of the top of the work is covered with dressed poles. During the past two years the work notwithstanding the length and exposed position has withstood the storms and scour as well as could be expected, however, small settlement in ballast took place from time to time as also some of the bottom crib logs working out, these were replaced, settlement made up with brush and stone, and portions further fender piled at about 3 feet centres. The expenditure during last fiscal year amounted to \$650.36.

GRAHAM'S POND.

Graham's Pond, King's county, is situated on the east coast of the island, about five miles south of the entrance to Cardigan bay, and about the same distance north of Murray Harbour. The pond has a length of about half a mile, and width of from 600 to 800 feet, carrying in the body of the pond and a short distance from the entrance, a depth of from 5 to 7 feet of water at ordinary pond level, which was usually $1\frac{1}{2}$ to 2 feet higher than ordinary low water, and 3 to $3\frac{1}{2}$ feet below high water spring tides, that here rise 5 feet.

During the summer of 1900, a new channel was opened into the pond by the Marine and Fisheries Department (existing one having gradually worked to the south, where the outlet passed over a reef), with the view if possible to admit of boats entering the pond at all stages of the tide, but the new cut was found on the occasion of the first northeasterly storms to be filling in again, and working back to what had been its former position.

In the fall of 1901, by the instruction of the department, the cut made by the Marine and Fisheries Department was cleaned out and a protection of brush, stone, and piling placed at its entrance, which proved effective in keeping the channel in the course desired, besides giving some small place of shelter for boats, on this account extension of the works has since been made each year, sums of \$500 being expended in 1902-3 and 1904, by which cribworks or piers have been built, 340 feet long by 15 feet wide, on either side of the new channel formed.

During last spring, as the outer ends of the works were much damaged by strong northeast gales, the sum of \$599.68 was expended during the past fall in rebuilding, raising and strengthening the outer 70 feet.

GRAND RIVER WHARF.

Grand River wharf, Prince county, is situated on the north side of the Grand or Ellis river, near its mouth, where it enters Richmond bay, about seven miles northeast from Wellington station, on the line of the Prince Edward Island railway. It was constructed by the Prince Edward Island government during 1880-2, at a cost of \$4,618.60, when it had length of 654 feet with width of 22 feet, consisting of shore abutment or approach of 530 feet long, and two blocks with intervening spans of 25 feet each, the blocks being respectively 31 and 44 feet long, all of the work being constructed of square timber, close-faced and filled in with brush, stone, &c. The roadway, excepting on the outer block, which was floor stringered and planked over, was formed of clay and gravel filling. Some 8 or 9 years ago the work became unserviceable, the outer block being carried away, and the filling in the shore abutment either washed out or so settled as to render passage over it impossible and requiring reconstruction of the greater part of the work, and as this the local government was unwilling to undertake, the property was transferred to the federal government in the fall of 1902. An appropriation of \$1,500 was granted by parliament towards its reconstruction and

SESSIONAL PAPER No. 19

repair, which work was commenced in spring of 1904, and by end of June of that year, all of the shore abutment had been placed in good condition. Tenders were then called for the reconstruction, repair, &c., of the outer portion of the wharf, and was awarded to Messrs. McNeill, Arsenault & Pembroke, for the sum of \$3,155, who satisfactorily completed their work about September 1, last. A severe storm which occurred after tenders had been received carried away top portion of outer detached block. This the contractors rebuilt and were allowed an extra at a rate in proportion to their contract, or an amount of \$300.

Total expenditure during last fiscal year was \$65.

CRAPAUD.

Crapaud, or Victoria Pier, Queen's county, is situated at the head of navigation inward of 'Crapaud Basin' at Victoria village, which is the most important point for shipments next to Summerside, on the southwestern coast of the island; it is about midway between Charlottetown and Summerside harbours, and about eleven miles by road, south from Emerald junction on the line of the Prince Edward Island Railway.

The pier has a length of 486 feet, consisting of a shore abutment or approach, 276 feet long and 20 feet wide, a middle section of 210 feet and 37 feet wide, and a pier-head, 58 feet wide and 73 feet long, and height is about 20 feet at the outer end, where the depth of water carried is 9 feet or 17½ feet, at high water spring tides that here rise 8½ feet.

During the past year some of the floor stringers, span beams, and covering of the spans and blocks became so decayed as to require renewing, which was done at cost of \$263.87.

HAGGERTIES WHARF.

Haggerties wharf, Queen's county, is situated on the southeastern side of the Hillsborough river, about ten miles from Charlottetown.

The wharf consists of a shore approach, 372 feet long and 20 feet wide; a pier-head 91 feet long and 31 feet wide at outer end, which extends out to a depth of 9 feet at low water, or of 19 feet at high water springs, which here rise 10 feet.

During the past year repairs were made to roadway where washout and settlement had occurred, some guard timbers and covering were also renewed at a total cost of \$177.30.

HURD'S POINT PIER.

Hurd's Point pier, Prince county, is situated on the southern side of Bedeque or Summerside harbour, and about 3 miles south of Summerside, the shire town of the county. The pier is a most important shipping place, being about the only outlet for the surplus produce of a large and rich agriculture district. It is also the calling place for the ferry steamer plying in the harbour, and which makes several trips daily between Summerside and the pier. It is 500 feet long and 26 feet wide, excepting the outer 50 feet where the width is 65 feet; it is one of the Prince Edward Island piers, control of which was assumed by the Dominion government in 1884.

At present the pier is in need of much repair, and it was the intention of the department to effect these during last fall, but as by the time materials could be procured, opening up of the work would interfere with fall shipping, only a few temporary repairs were made to the floor, stringers, planking and roadway, some material was also procured.

Total expenditure during the last fiscal year, \$51.64.

6-7 EDWARD VII., A. 1907

KIER'S SHORE PIER.

Kier's Shore pier, Prince county, is situated on the east side of Richmond bay, about 7 miles from Kensington, a village and station on the line of the Prince Edward Island Railway.

The pier, originally constructed by the local government and residents of the district, has a length of 1,033 feet and a width of 20 to 25 feet, excepting for the outer 50 feet where it is 40 feet wide, with the exception of a short span (17½ feet) at 283 feet from the outer end. All the work is constructed of close-faced timber work, filled with brush and stone, with roadway of clay or gravel, excepting an outer 50 feet or pier-head which is floored, stringered and planked over.

During the last fiscal year the sum of \$250 was expended in filling in with broken stone and gravel all places where settlement had occurred in the roadway, effecting repairs to planking on pier-head, securing fenders, &c.

MCPHERSON'S COVE.

McPherson's Cove wharf, King's county, is situated on the south side of Grand river, near its mouth, being immediately within what is known as 'Morrison's Beach,' which separate Grand river from Boughton Bay. The beach has nearly a length of a mile, extending in a northerly direction to about opposite Annandale, where a ferry is maintained by the local government that has also a small wharf on the point of the beach, where shipments used formerly to be made by the residents of the northern side of the river and vicinity. Produce had to be hauled over the beach with great difficulty, and of late, the wharf was so badly out of repair that two years ago it became useless.

At the desire of the residents of the district, the department undertook to provide shipping facilities at the Cove. Plans and specifications were prepared, and tenders called for a wharf, 700 feet long; the contract was awarded to Mr. Thomas Campbell, for the sum of \$8,999. Work was commenced in March, 1905, and contract satisfactorily completed by end of October.

The wharf consists of a shore abutment, 300 feet in length; five 30-foot blocks, with 20-foot intervening spans, and outer blocks, 100 feet in length, connecting with a 40-foot pier-head.

The wharf is 20 feet wide, except pier-head, which has a width of 40 feet. Up to two feet above low water, the work is built of close laid poles, above which it is of square timber close faced, solidly filled with ballast, carrying at the outer end 2½ feet at low water springs, of 7½ feet at high water spring tides, that here rise 5 feet.

Expenditure during fiscal year of 1905-6, \$7,064.

MIMINEGASH.

Miminegash harbour, Prince county, is situated on the northwest coast of the island, about fifteen miles from North Cape, and eighteen miles north of West Point.

Before its improvement by the department it was one of the numerous ponds along the coast, having channels emptying into the Gulf of St. Lawrence, often changing position when very severe storms occurred, becoming completely closed as they passed through low sandy beaches. As, however, the entrance to Miminegash pond was to some extent sheltered by 'Miminegash reef,' a ledge of rock nearly a mile long, lying parallel to the shore at about a half mile distant, it had much advantage over the other ponds along the coast, and after examination of it and the other ponds on the coast proposed as sites for the formation of a harbour, Miminegash was selected by the department. Work was commenced in 1878, and now consists of piers or breakwaters on either side of the entrance (position of which has been made permanent) and confining its width to 56 feet; the breakwater on the north side is 550 feet long,

SESSIONAL PAPER No. 19

and the one on the south, 350 feet inward of both there are protection works so as to guard against new channels forming through the beaches, which originally were little above height of high water spring tides.

On December 12, last, a contract was entered into by Mr. Andrew Martin, of Bloomfield, for the construction of a close-faced timber block, 30 x 50, at outer end of southern breakwater, for the sum of \$2,375. The work was satisfactorily completed on May 28, 1906. The sum of \$509.37 was also expended in the construction of a roadway, 1,200 feet in length, over the sand beach, which was most difficult to haul over. It has a width of 18 feet, and formed of clay $2\frac{1}{2}$ feet in depth, which has hardened, giving a good surface for hauling over.

Total expenditure during the last fiscal year, \$3,173.63.

NEW LONDON.

New London harbour, Queen's county, is on the northern coast of the island, about ten miles east of the entrance into Richmond bay, and nine miles west from Rustico harbour. Within the entrance, which has a width of about 1,200 feet, the harbour is about three miles long and nearly as wide. It receives the waters of the 'South-west,' the 'Stanley,' the 'French' and the 'Hope' rivers, all of which are navigable for at least short distances, where wharfs or shipping places are located and from which export is made of large quantities of produce, the districts surrounding the harbour being well cultivated and very productive. The New London districts, unlike so many other portions of the island, has no convenient railway facilities; the harbour also is largely used as a fishing station and a place of refuge for fishermen, being conveniently situated near some of the best fishing grounds of the Gulf of St. Lawrence.

For improvement of the entrance, which is obstructed by a shifting sand bar, works were begun by the department in 1878, and these now consist of breakwaters and beach protections on each side, that on the eastern side now having a length of 1,200 feet, while the western one is 460 feet long, their purpose being to confine the water by preserving and extending the sand beaches, and thus by increased current, caused to scour away a part of the bar, which result has been obtained to a most satisfactory extent proportional with the expenditure, the depth of water being much improved. At such times as the works are in good condition since its construction, the western work has received no injury requiring repair or expenditure. On the west side of the harbour, about 1,000 feet inwards, or southwesterly from the western breakwater, a 'shear dam' or 'jetty' was built in 1904, for the purpose of improving the depth of water over the shoal at the junction of the 'French' and 'Southwest' rivers. The work has a length of 550 feet, extending to near the inner edge of the shoal, and constructed for its entire length of 300 feet of round-log open cribwork, 12 feet wide, filled with ballast and fender piled on sides at 10 feet centres; for a further distance of 200 feet the work is 17 feet wide, and constructed of brush, piles and stone, the outer 50 feet being of similar materials but 23 feet in width, all of 250 feet being close-piled on sides and having its top planked over.

The eastern work being exposed to a very heavy sea at times, strong current and action of ice, requires about yearly some expenditure for its maintenance. During the past year the sum of \$1,558.62 was expended in close-piling the seaward side and channel face of outer block, and reconstructing length of 300 feet of beach protection works.

PANMURE ISLAND.

Panmure Island wharf, King's county, situated on the south side of Cardigan bay, about four miles distant from Georgetown, is about one and one-half miles long by about three-quarters of a mile wide, and is connected to the mainland by a sand beach about one and one-half miles in length.

6-7 EDWARD VII., A. 1907

There being no shipping facilities on the island, all the surplus produce being hauled over the sand beach to St. Mary's Bay wharf, a distance of six miles, or loaded in small boats on the shore, thence unloaded into vessels anchored in the bay.

The sum of \$2,000 was voted by parliament for expenditure in 1904-5 for the construction of a wharf about 300 feet long, giving two feet at low water, or six feet at high water. Work was commenced last May, and by end of fiscal year 200 feet of work was completed at a cost of \$1,285.92.

During the past season a further length of 80 feet was built, at a cost of \$695.48, making total cost of work, \$1,981.50. The work has a length of 280 feet and width of 20 feet, and is constructed of round-logs open cribwork; fender-piled at 10 feet centres and solidly filled with ballast.

RED POINT.

Red Point pier, Queen's county, is situated on the eastern side of the Hillsborough river, about six miles northeasterly from the city of Charlottetown. It is 650 feet in length, and 21 feet in width, consisting of a shore abutment, 310 feet in length, and 5 blocks, from 29 to 75 feet in length, with intervening spans from 21 to 25 feet in width. The shore abutment and the blocks are filled in with brush, stone and clay, the outer blocks, as well as the openings, are planked over.

During the past fiscal year the sum of \$300.05 was expended in rebuilding part of second block, filling in washout in roadway, and making general repairs to covering required to outer block and intervening spans.

RUSTICO.

Rustico breakwater (North), Queen's county, is situated on the north side of the island, about midway between East Point and North Cape, and is one of the most important fishing stations. For improvement of its entrance, which is obstructed by a shifting sand bar, the department during 1881-2-3-4, constructed a breakwater on the north side of the harbour, for the purpose of confining the current at ebb tide, and thus by scour, deepen the water, which desired improvement was to an extent obtained, also protecting the inner low beach on which most of the fishing stages and fish houses are situated. Originally the breakwater was 1,240 feet long, but through the effects of storms, action of ice and ravages of the teredo, 120 feet of its outer end was, in 1894, completely carried away; to prevent more of the work being damaged, extensive repairs were made under contract, in 1895-6, a head-block 30 x 60 feet was added to the outer end.

Injury is more or less usually each year sustained, requiring repairs, last season the sum of \$238.13 was spent in repairing, the sheathing on the sloping face, covering on deck, reballasting where settlement had occurred, and other small general repairs.

ROBINSON'S ISLAND.

Robinson's Island (Rustico harbour), Queen's county, is situated on eastern side of entrance to Rustico harbour, and extends in an easterly direction for a distance of three miles to what is known as Little Harbour, where only small fishing boats can enter. It consists principally of a low narrow sand beach with high sand hill ranges along its centre, excepting at eastern end, where a small portion of it is under cultivation. On the northwestern side of the island, or about 1,500 feet in a southeasterly direction from the Rustico (North) breakwater, the department, in 1883, built a work 450 feet in length, but which since has been entirely carried away or sanded up. Marked changes have taken place in the channel and beaches since both works were constructed, there being a depth of about 7 feet at low water, on the shoalest part of the bar, or 10 feet at high water springs.

SESSIONAL PAPER No. 19

For the further improvement of the harbour, a contract was entered into July 4, 1905, for the construction of a breakwater, 750 feet in length, extending in a north-easterly direction from western end of island, its outer end to be distant about 1,400 feet from outer end of North breakwater. Constructed, for its inner length of 200 feet, of round-log cribwork, 13 feet wide, fender piled on the sides at 10 feet centres, and solidly filled with ballast; for the further distance of 500 feet it is 18 feet wide, and constructed of brush, stone and piles; the outer 50 feet being of similar nature but 26 feet wide. All of the 550 feet being close piled on the sides and having the top planked over. Work was commenced latter part of July, 1905, and by end of fiscal year a length of about 450 feet was completed.

Total expenditure during last fiscal year, \$3,976.25.

ST. PETER'S BAY.

St. Peter's bay, King's county, is entered from the Gulf of St. Lawrence about 35 miles west of East Point; it is situated on the north coast of the island, and is of considerable extent, running inland some 8 miles, with an average width of $\frac{1}{2}$ of a mile and carrying a depth of from 2 to 3 fathoms at low tide. The entrance is obstructed by a sand bar carrying only from 6 to 7 feet at low water spring, rendering the bay only available for vessels of small size, of which large numbers resort to it during the fishing season.

For improvement of entrance, a breakwater was commenced by the department in 1878, extending from the west side, and has now a length of 256 feet, built of close-faced solid timber work, fully ballasted, floor stringered, and planked over; its inner end being connected with the sand hills or ground by a beach protection or breastwork, 1,420 feet long. It is proposed to further contract the width of the entrance by building a work on the eastern side, and close up channel now forming close to sand hills, and by increasing the current improve the depth of water over the bar.

To accomplish this, a contract was entered into August 3, 1905, with Messrs. Lachance & Kennedy, of Ottawa, for the sum of \$12,750 for the construction of a breakwater, 900 feet in length, material for which was taken out during the winter, work commencing early in the spring.

At end of fiscal year the contractors had about completed driving the bearing piles, and placing the top walings and cross head in position, on the outer 625 foot length of work.

The expenditure during the fiscal year 1905-6, amounted to \$897.27.

SAVAGE HARBOUR.

Savage Harbour, King's county, is situated on the north side of the island, about three miles west of entrance to St. Peter's bay, and about five miles north-east from Mount Stewart Junction, on line of Prince Edward Island Railway; it is 22 miles by rail from Charlottetown. The harbour while of considerable extent is in general shoal, and its entrance is obstructed by a shifting sand bar usually carrying about three feet at low tide, with rise of three feet at high water spring tides. The position of the channel is not permanent, being changed by storms, and at times more than one channel is formed through the beach.

To prevent storm tides from breaking over the beach, and carrying the sand into the harbour, brush hurdles were built in the winter of 1905, along western side of beach, for a distance of 4,500 feet, at a cost of \$1,006.

During the last fiscal year, repairs and enlargement of brush hurdles were effected for a sum of \$755.50.

SOURIS.

Souris Harbour, King's county, is situated on the southeastern side of the island about sixteen miles west from East Point. It is an important harbour of refuge, and

6-7 EDWARD VII., A. 1907

place of shipment, for both of which it has been rendered available by the breakwater, built and maintained by the Dominion government.

The work which was commenced in 1875 has now a length of 1,250 feet; this being of different widths, forms, and constructions may best for description be divided into three sections or portions, viz. : Inner, 290 feet long and 30 feet wide, formed of close-faced square timber, plumb faced on sides, and having on seaward side a protection stone slope the work standing in an average depth of 7 feet at low water spring tides.

Middle, 530 feet in length, averaging 65 feet in width, also of close-faced squared timber, but on the seaward side having the upper 10 feet sloping 1 to 1, this section stands in an average depth of 17 feet at low water spring tides, having on its seaward side a protecting stone slope. Outer end of breakwater finishes with a block, 40 x 80 feet, about 35 feet in height, constructed of close-faced creosoted timbers, standing in a depth of about 23 feet of water at low water springs.

During the past fall the sum of \$131.68 was expended in making up ballasting in portions of work where settlement had occurred; an agreement was also entered with F. S. McDonald, to deliver and place a further quantity of large stone on seaward side, but owing to lateness of season when arrangement was made, delivery did not commence till spring, but by end of fiscal year, the contract was satisfactorily completed. The total amount expended being \$4,130.15, including cost of inspection.

SOUTH RIVER (MURRAY HARBOUR).

South River pier (Murray harbour, south), King's county, is situated at the head of navigation, immediately below public road bridge, on the South river, and about three miles inward from entrance to Murray harbour and close to Murray harbour station, the present terminus of southern branch of the Prince Edward Island railway. The pier extends out from the north bank of the river (that is here about 300 feet wide), to edge of channel, where a depth of 10 feet of water is carried at low water spring tides, giving with rise of 5 feet 6 inches at high water, good approach for the largest sized vessels usually visiting the harbour.

The pier consisted of an approach, 89 feet long, an 'L,' or pierhead, having a length of 107 feet, on channel face, both approach and pier-head being formed of timber blocks with intervening spans, all of which, excepting at the shore end, was floored, stringered and planked over. Owing to natural decay of timber work on top, and injury from ice to bottom portions, the pier had become unserviceable and unsafe for traffic—in danger of outer blocks falling into channel. Timber for its re-construction was delivered last winter, and work commenced early in May.

At end of fiscal year the reconstruction of the approach and of first block adjoining was about completed, at an expenditure of \$1,496.94.

SUMMERSIDE.

Summerside harbour, Prince county, is on the southern coast of the island, and is second place in importance for shipping; the town of Summerside being also next in size to Charlottetown, and in population having about 3,000 inhabitants. It is one of the principal stations on the line of the Prince Edward Island railway, by which it is distant from Charlottetown forty-nine miles, and from Tignish, the western terminus, sixty-eight miles.

During the season of navigation, daily communication is maintained with the mainland by the steamers of the Prince Edward Island Steam Navigation Company, at Pointe du Chene, where connection is made by the Intercolonial railway with all parts of Canada and United States.

The entrance into harbour between Indian Head and Phelan point is about one and a half miles wide, a sandspit, however, partly dry at low water, extends about 3,200

SESSIONAL PAPER No. 19

feet from Indian Head, the water also being shoal for a distance from the opposite shore, so that the deep water channel, carrying 18 feet or better at low water spring tides, is only about 500 feet wide opposite the lighthouse, that is situated on the north side of the sandspit, outward of Indian Head, inward of this, to the railway and other wharfs at the town, the channel is from 400 to 1,200 feet wide. (See report, 1902).

For improvement of channel as to direction and depth, dredging at different times has been done by the department, while for protection from southwesterly winds a contract was entered into, on February 27, 1906, for the construction of a breakwater to extend 3,220 feet, from Indian Head to the outer side of the sandspit, on which the lighthouse is situated. The work will consist of a cribwork core, 10 feet wide on top, the height of which will be to level of high water spring tides, and which, after being built, will be entirely covered with stone forming a rubble mound 4 feet wide on top and 5 feet above assumed high water spring tides, and having a slope on seaward side of 2 to 1, and on inner side $1\frac{1}{2}$ to 1. The length of stone work will be 3,200 feet, and finished with an outer block, measuring 112 feet long by 20 feet wide on top, constructed of closed faced timber work, fully ballasted, having a slope of 1 to 1 on its seaward side and ends, all timber below ordinary high water to be creosoted.

Work was commenced in May and by end of fiscal year 400 feet of the crib was partly built, placed in position, and ballasted.

The expenditure during 1905-6 amounted to \$802.13.

TIGNISH.

Tignish harbour, Prince county, is on the north or gulf coast of the island, about six miles southward of North Cape, at the mouth of the Tignish river, where the coast is quite straight for a long distance. Gales from the northeast to the southeast throw in a heavy sea, and these, acting on the shifting sands of which the beaches are for the most part composed, often completely block up the entrance which remains closed until broken through by some freshet or by occasional high tide. To keep the entrance permanently open and retain the channel in one place, the Government of Prince Edward Island, in 1868, began the construction of works on both sides of the river, to contract the stream at its mouth to a width of 40 feet, the effect of which has been by increasing the current to give general increased depth of water; the entrance has never since been closed to navigation during the season.

Since confederation, the original works have been repaired, raised, and extended by the department; beach protection work also being constructed on both sides, over the low-lying beaches, to prevent the breaking through of the sea, a portion of the channel has also been dredged, all of which has proved of the greatest benefit, increasing the business of the port, as well as giving good accommodation for shelter for the fishing boats, and a place of shipment for produce and general merchandise.

For the strengthening and protection of the southern breakwater, the outer end of which had become much weakened by the action of the ice, ravages of the 'teredo,' &c., a contract was entered into, on July 4, 1905, with Messrs. J. H. & E. M. Myrick, of Tignish, for the construction of a new block, 30 x 50 feet, to be placed outward and adjoining the end of the work.

Work was satisfactorily completed by the end of the fiscal year, 1905-6.

Total expenditure during last fiscal year, \$2,998.75.

WOOD ISLANDS.

Wood Islands, Queen's county, situated about 30 miles southeast of Charlottetown, and 15 miles westward of Cape Bear, and the most southerly portion of Prince Edward Island. Originally two small islands, they are now connected together and to the shore by sand beach, and a sandspit extending out from the shore to within 300 feet of what has been the eastern island. Here the formation of a shipping place

6-7 EDWARD VII., A. 1907

was commenced in 1859, by the provincial government, but, as at no time were the works in good condition, little if any good resulted from them until 1894, when reconstruction of the northern breakwater was effected by the department, and the southern one repaired; this latter has since been extended, having now a length of 950 feet, and the northern one 2,500 feet. Since construction of the southern work, the increased scour being in danger of undermining it, close piling has been put on different parts of the face, the seaward side was also protected from the action of the sea by the putting in of brush mat, with stone filling on top.

During the past season, there has been constructed a cribwork jetty, 150 feet long by 15 feet wide, extending northward from inner end of southern breakwater toward channel to prevent scour on face of breakwater and to increase depth of water in channel; it is built of round logs open cribwork, ballasted and fender piled at 10 feet centres, costing in all the sum of \$753.67. Much benefit has been derived from the work owing to the increase scour effected in the channel, giving 2 feet better water at the loading berths, thus enabling much larger vessels to depart at ordinary tide than heretofore.

NEW BRUNSWICK.

ANDERSON'S HOLLOW.

Anderson's Hollow, Albert county, is a cove of Salisbury bay, on the northwest side of Chignecto channel, in the Bay of Fundy. Spring tides rise $40\frac{1}{2}$ feet, neaps, $32\frac{1}{2}$ feet.

The breakwater wharf at this place was begun in 1879, by the construction of a detached block 550 feet from the shore, with which it was afterwards connected. In August, 1885, the work was 290 feet in length, and three years later was carried to the shore. The structure, 25 feet wide at top, was originally 27 feet high at the outer end, but the bottom having been raised by the accumulation of the littoral drift, the height is now 3 or 4 feet less. It is built of round timber cribwork, lightly battered on the inside, but sloped at the rate of $\frac{1}{2}$ to 1 and sheathed on the weather face.

The breakwater was damaged by storm on November 21, 1895, when a small light-house placed at the outer end was swept away, with part of the break, while some of the top work at the head was simultaneously shaken and started.

In 1895-6, a small sum was applied to bolting loosened timber for temporary security.

During the fiscal year 1896-7, the inside face of the wharf at the outer end, which had received a heavy list in the storm of the previous year, was taken down and rebuilt for a distance of 75 feet on top and 44 feet on the bottom. The list was taken out, the new face being carried to a height of 15 feet, in order to level the top, and new covering was laid for a length of 75 feet. Seventy feet out of 110 feet of dismantled break was reconstructed, and fenders were placed on the inside of the new face.

In 1898-9, by an expenditure of \$121.31, twenty-seven pieces of new sheathing were laid and bolted to the sloping face; a new cap and face-timber was inserted, and the gap in the break, 40 feet long, left unfinished at the time of the previous repairs, was built up with four tiers of timber strengthened with knees.

In 1900-1, the break-timbers, which had been started up from 3 to 9 inches by storms for a distance of 290 feet, were restored to position. For 25 feet at the outer end, the break was raised one tier; 8 bridles, 9 inches square, were placed between the knees of the break for a distance of 100 lineal feet; 3 new pieces of 6-inch sheathing were placed on the sloping-face, and loose planks were secured with bolts. Through the shoal obstructing the work on the inside, a channel 300 feet long, 35 feet wide and 5 feet deep was made by means of a wheel scraper. It was found, however, that the

SESSIONAL PAPER No. 19

shoal formed again rapidly with the recurrence of any southwest wind. A groyne, 50 feet in length, made of piling and 9-inch timber, was built on the outside of the work, in order to check for a time the accumulation of littoral drift on the inside.

During the year 1901-2, new sheathing, 6 inches thick and from 22 to 26 feet long, was laid and secured with $\frac{3}{4}$ -inch bolts, at different places along the weather face of the outermost 190 feet. Additional bolts were also driven to secure the old and loosened sheathing, while 71 pieces of new covering, 6 inches thick, were placed on top of the work.

During the year 1902-3, the weather face of the outer block, 100 feet long, having become decayed, was cut down nearly to the bottom and rebuilt for a width of 13 feet with heavy timbers, secured in great measure with screw bolts, the outside being sheathed with 9-inch spruce. More than half the covering of this block was renewed. On it a new break was built three tiers in height for 26 feet, two for 61 feet and one tier for 13 feet in length. The covering was patched on other parts of the work. Four new fenders were placed and the cap renewed for a length of 47 feet. An extension of 50 feet, for which foundations were excavated through the shoals to the rock, was begun and brought up to a height of four tiers.

During the fiscal year of 1903-4, the break on the outer block was completed and the sheathing was fully bolted. An extension, 50 feet long and 27 feet wide, on top, was brought up to within two tiers of the finished top. The shoal was excavated sufficiently to make beds for the shipping.

Like many other works in the Bay of Fundy, Anderson's Hollow crosses the direction of the flood stream and of the prevailing winds. In consequence an accumulation of littoral drift is found on the southwest side, which travels round the end, and is deposited under the lee of the breakwater, forming a shoal which is an obstacle to vessels.

In 1904-5, the extension was completed, sheathed, covered, ballasted and fendered; one new ladder was made and placed in position; a quantity of sheathing was rebolted; 5 new fenders were placed; 700 lineal feet of pieces of covering were laid; 35 feet of new cap were placed; 1 new mooring-post was put in and the break was rebuilt for 72 lineal feet.

The steep approach to the wharf was improved by lowering the rock cutting 4 feet, by widening it to 14 feet and by making an embankment 21 feet wide, supported on both sides by retaining walls of stone, each 33 feet long, 9 feet in mean height and $2\frac{1}{2}$ feet in mean thickness, containing 55 cubic yards of dry masonry.

In 1905-6, from 80 to 90 new pieces of sheathing were laid on the battered face; 13 ribs were bolted to strengthen the break; 7 fenders were secured; 2 new mooring-posts were placed in position and a bed for vessels was made alongside the work. A dyke of brush and stone, 420 feet in length, containing 155 cubic yards, was besides built to lead the stream to scour the shoal.

The expenditure during 1905-6 amounted to \$442.86.

BAIE DU VIN.

Baie du Vin, Northumberland county, is situated on the inner Miramichi bay, 20 miles below Chatham.

The original wharf at Baie du Vin was built by the local government and was 760 feet long. Shortly after construction, the outer 283 feet of the wharf was carried away. A contract for the rebuilding of this portion was let by the department in May, 1901, and completed in September, 1902.

In August, 1905, the slope of the slip in the pier-head, which was dangerously steep, was reduced by laying wedge-shaped stringers over the old flooring and covering them with 4-inch plank.

The expenditure for the year was \$20.

6-7 EDWARD VII., A. 1907

BLACK RIVER.

At Black river, a small cove in the Bay of Fundy, 12 miles east of St. John, where spring tides rise 25 feet, a wharf of square cribwork, 155 feet long, 27 feet wide and 30 feet in extreme height, was built by the department in 1879, for the use of coasting vessels.

Between 1891 and 1898, the work received small repairs, and the total expenditure up to the 30th of June, 1898, amounted to \$4,407.92, of which \$3,907.40 may be charged to construction and improvements and \$500.52 to repairs.

During the year 1898-9, a sum of \$450 was expended in replacing 36 fenders, in taking up and relaying the covering, in building ladders, &c.

For some years no shipments were made at Black River, but of late, lumber, cut by portable mills in the neighbourhood, has been loaded at this work.

Heavy rains in the summer of 1904 scoured the road to a depth of three feet and washed down quantities of sand and stone on the top of the wharf, completely covering it to a depth of six inches at the outer end and three feet at the inner end.

In 1904-5, this was cleared off the wharf and the inner end was pulled down and rebuilt for a height of 13 tiers, but the road remained unrepaired.

In 1905-6, the road, which had become impassable, was repaired.

The expenditure during 1905-6 was \$589.25.

BUCTOUCHE.

Buctouche, Kent county, with a population of between 600 and 1,000, is situated 4 miles above the mouth of the Buctouche river, which empties into Northumberland straits, 22 miles south of Richibucto and 17 miles north of Shediac.

In 1884-6, the department constructed a cribwork wharf, 300 feet long by 40 feet wide, with a depth at the face of 17 feet at high water and 21 feet at low water of spring tides, off from and at right angles to the highway bridge.

The wharf was badly damaged by fire in 1894, and partly repaired in the following year.

Between 1899 and 1901 and in 1903-4, the wharf was thoroughly repaired. Instead, however, of rebuilding of cribwork, pilework was substituted in order to keep the weight of the superstructure off the worm eaten timbers below, and thus avoid crushing.

The approach from the street was damaged by fire in the spring of 1905, and was repaired shortly after.

In 1905-6, 6-inch creosoted sheet piling was driven between the fenders on the outer face, 291 feet long; 9-in. x 9-in. bridles were placed over the top of the sheathing to bring the new face, level with the top of the cap. The wharf was filled to from 2 to 3 feet of the flooring with an average of 4½ feet of brush and 2½ feet of ballast. The approach from the street was raised to cross the Moncton and Buctouche Railway siding, which had been raised and shifted, and a small quantity of ballast and gravel was placed where the approach had been washed out by a storm.

The total expenditure for the fiscal year 1905-6 was \$1,505.73.

BUCTOUCHE BEACH.

Bouctouche harbour, Kent county, is separated from Northumberland straits by a sand beach from six to seven miles long. At the southern end of the beach is the entrance to the harbour. The northern end, off which are important fishing grounds, is connected with the mainland.

The inhabitants of the northern end of the harbour are practically debarred from outside fishing by the distance from the village around by the harbour entrance to the

SESSIONAL PAPER No. 19

fishing grounds, and there is no shelter for boats on the outside shore. It is therefore proposed to make a cut through the beach at its northern end, its narrowest point, the width there being only about 500 feet.

During 1904-5, a breastwork of stakes and brush, 1,585 feet long, was built to raise a low part of the beach formerly washed by high tides, and materials were obtained for breakwaters to be built at the outer end of the proposed canal.

The breastwork was completed in the autumn of 1905, and refilled with brush for a length of 1,500 feet, in the spring of 1906. Its total length is 2,800 feet.

During 1905-6, about 4,000 cubic yards of sand were removed from the site of the proposed canal, by scrapers and hand labour. A row of close piles, 219 feet long, was driven to form a breastwork along the north side of the cut, and the two breakwaters were begun. The north breakwater consists of a shore portion, 36 feet long and 4½ feet wide, of piles driven every 4 feet, filled between with brush; and an outer portion 180 feet long and 11½ feet wide, close piled on the outside and strengthened with 10 inches by 12 inches and 10 inches by 10 inches walings and cross-ties. The timber work of the north breakwater is complete and is filled with brush for a length of 80 feet. The piles are driven on the south breakwater, of which the shore portion is 35 feet and the outer portion 108 feet long; the shore portion is filled with brush; 731 feet of fascines were made for the breakwaters.

An office or tool house, a stable, and a pile driver frame were built, and a weight for the pile driver procured.

The expenditure for the fiscal year ending 30th June, 1906, was \$5,960.

BURNT CHURCH.

Burnt Church, Northumberland county, is a farming, fishing and lumbering settlement on the north shore of Miramichi bay, twenty-two miles northeast of Chatham. The Miramichi Steam Navigation Company's boat calls twice daily during the season, and the place is much frequented as a summer resort.

During 1899-1900, a contract was let for the construction of a cribwork wharf of round timber, 1,180 feet long, composed of a shore block, 200 feet long and 20 feet wide; 23 blocks, 21 feet long and 20 feet wide, placed 20 feet apart, and a pierhead, 60 feet long by 40 feet wide. The work was completed on the 15th September, 1901.

During 1903-4, a boulder weighing about ten tons, which lay in the path of steamers approaching the wharf, was blasted and removed. The two outer spans were closed to give security for boats lying inside the pierhead, and in 1904-5, the batter at the ends of the pier-head was reduced from 1 in 2 to about 1 in 5 to make the ends as well as the front available as berths for vessels.

During 1905-6, slips about 10½ feet long and 7½ feet wide, were cut at each end of the pierhead, 2 feet below the level of the floor at the face, so that freight might be conveniently unloaded from steamers at low tide, and four fenders carried away by ice were renewed. A careful search was made for boulders which had been reported near the pier-head as dangerous. About thirty, weighing from 100 to 2,000 pounds were found and removed with the aid of a diver. One ledge and one large boulder, not directly in the path of the steamer and over which there is at least as much water as at the face of the wharf, were buoyed.

The expenditure for the fiscal year 1905-6 was \$473.01.

CAMPBELLTON.

Campbellton, Restigouche county, an incorporated town of about 3,000 inhabitants, is situated on the southern side of the Restigouche river, fifteen miles above Dalhousie and six miles below the head of the tide. It is a station on the Intercolonial Railway and an important deal port.

6-7 EDWARD VII., A. 1907

The department here in 1889 built a ballast wharf of close-faced cribwork, 140 feet long by 34½ feet wide on top, 108 feet below the then Ferguson wharf. In 1892 a second block was built in the space between the two wharfs. In 1902-3 the old Ferguson wharf, lately known as the Shives' wharf, was purchased by the Crown to provide an approach to the other wharfs, and in 1903-4-5 was repaired along its outside face and for a length of 46 feet on the upper or western side. Materials costing \$783.55 were also obtained towards continuing the repairs of the western face in to the shore.

The department wharfs then had a total frontage on the river of 340 feet, and depths of 15 to 20 feet at L.W.O.S.T. along the face, which was entirely inadequate for the demands of traffic.

On the 11th October, 1904, a contract was entered into with Messrs. C. J. B. & S. D. Simmons for the construction of a deep water extension, easterly from the departmental wharfs, 304 feet long by 35 feet wide, to be connected with the old work by a span 18 feet 7 inches wide on the outer face, and to be built on a foundation dredged to 22 feet at low water. The contract price is \$35,300.

Construction was begun on the 12th June, 1905, and by the 30th June, 1905, one crib, 140½ x 41 feet at bottom, had been built to a height of 12 feet 3 inches.

The site was dredged in July, 1905, and at the close of the fiscal year 1905-6 the work was completed with the exception of the upper lengths of fenders, the cap, the covering stringers and about three tiers of timbers on the eastern 280 feet of the wharf and the ballasting.

To provide additional accommodation for coasting traffic, the other wharfs being chiefly occupied by the deal vessels, a contract was entered into on February 28, 1906, with Mr. William Glover for the construction of a wharf, 200 feet long by 75 feet wide on top, to be built as a western extension to the government wharfs. The contract price is \$16,495.

At the close of the fiscal year, the cribwork was practically completed, 271 feet of the cap, two-thirds of the covering and nearly all the stringers being laid. Piles had been driven along the western end and for part of the front face, and hardwood sheathing placed along 70 feet of the rear, 3 mooring posts had been placed. The work has a depth of 9 feet at extreme low tide, along the outer face which is being closely piled, to permit of dredging if necessary.

Instead of continuing the repairs on the western face of the Shives' wharf shoreward, a narrow wharf was built during the fiscal year, by day labour, outside, on the line of the westerly side of Ramsey street. This wharf is 258 feet long and 15 feet wide on top. The inside face is of open cribwork and has a batter of 1 in 4, the outside face is sheathed with hardwood and has a batter of 1 in 12. The outer end of this work connects with the inside face of the western extension. About 24 feet of sheathing, a small quantity of ballast and 3 ladders were still required on the work at the close of the fiscal year.

A considerable amount of material was deposited by the town last spring between the new wharf and the old face, and, when the space between the two is completely filled, the effect will be to widen the approach to the government wharfs by about 65 feet at the outer end and 29 feet at the inner end.

Total expenditure during 1905-6, \$42,888.47.

OLD FERRY WHARF.

To provide a landing for the ferry steamer plying between Campbellton and Cross Point, Bonaventure county, Quebec, the department, between 1889-94, constructed a ferry wharf 406 feet long on a site selected by the town council.

This has not been used for some years as a ferry landing as the site was unsuitable, and a new landing giving only sufficient room for the ferry boat has been built elsewhere.

SESSIONAL PAPER No. 19

The old wharf is, however, much used by boats from the surrounding districts, both of Bonaventure and Restigouche county, and as it is greatly in need of repair, a part of the outer end being entirely carried away, its condition has been much complained of.

The inner 250 feet has been filled by the town with earth, &c., to make it passable for teams.

During 1905-6, repairs were begun by the department. The remains of the old planking were removed on the outer 100 feet, new 10 x 10 cap timbers were placed along the sides, two old spans were logged up at the sides, and the interior of the outer 100 feet, as well as parts of the inner section, were filled and surfaced with cedar bark, clay and gravel.

The expenditure for the fiscal year 1905-6 was \$570.36.

CAPE TORMENTINE.

Cape Tormentine, Westmoreland county, is situated on the southwestern side of Northumberland straits, at the extreme eastern end of Westmoreland county. It is the terminus of the New Brunswick and Prince Edward Railway and the nearest point of communication between Prince Edward Island and the mainland, there 9 miles apart.

To form an artificial harbour for purposes of interprovincial communication between the island and the mainland during the winter, a breakwater pier was constructed by the department between 1886 and 1892.

The structure comprises a straight pier or approach 2,500 feet long, the first 1,300 feet of which is a rubble mound 20 feet wide on top with slopes of 2 to 1 and the remainder close-faced cribwork 30 feet wide on top, and a pier-head and return of close faced cribwork, each 400 feet long and 40 feet wide from the base up to a little above low water, then decreasing to 30 feet at the top, which was originally 4 feet above high water spring tides. Between low water and the top of the work, the head and return presented a sloping face to the east and south, sheathed with hardwood. The whole incloses a basin or harbour of about 4 acres in area with depth, up to the autumn of 1892, of 13 to 15 feet at low water, but increased since then by dredging over parts to a depth of 18 feet.

Spring tides rise $7\frac{1}{2}$ feet and neaps $3\frac{1}{2}$ feet.

Owing to the ravages of the teredo, repairs became necessary to the timber section of the work soon after its completion and have since been carried on annually. They consisted, up to 1901, mainly of renewing the face timbers and sheathing of the sloping faces of the pierhead and return, protecting the north and a portion of the south faces of the approach, and about 300 feet of the outer face of the pier-head with large and small stone which is still in progress, and driving hardwood close piling along a portion of the inside of the approach and, later, creosoted 12-inch x 12-inch piles about $2\frac{1}{2}$ feet apart around the harbour side of the work.

During 1901-2, a temporary quay face, 205 feet long was constructed of piles, hardwood walings and cross-ties, along the outer or south face of the 'return' for the steamer *Stanley*, plying between Prince Edward Island and Cape Tormentine during the winter. A combined station and freight shed, 100 feet by 25 was built on the 'return.'

In 1902-3, the remains of the old slope at the southeast corner of the pier-head were replaced by a structure composed of double close piling (73 piles in all) and walings filled with stone, covered with $4\frac{1}{2}$ -inch plank, and secured outside with 4 iron straps. The work of raising and levelling the top of the timber portion of the breakwater which had settled considerably, was also begun, new face timbers, cross-ties and stringers being added for 750 feet of the approach to bring the top of the flooring 4 feet above H.W.O.S.T. The timbers were treated with carbolineum.

During 1903-4, this work was continued throughout the approach and for part of the pier-head in a similar manner, except that on the pier-head, piles were driven

6-7 EDWARD VII., A. 1907

5 feet centre to centre inside the sloping face and screw-bolted to face timbers and cross-ties. On a section of the pier-head, 49 feet long, next the corner rebuilt in 1902-3, the old timbers were removed nearly to low water level on the outside, and the work rebuilt with a vertical face, consisting of a row of piles 5 feet centre to centre, to which were bolted walings and three sets of cross-ties tied into the old work, protected by 42 creosoted piles driven close, and fully ballasted and covered with 5-inch plank. The top was levelled at 4 feet above H.W.O.S.T.

During 1904-5, this vertical face was continued northerly 45 feet, the new section being completed except for the close-piling, ballast and covering. The same work was undertaken on the return to replace the old slope, which had been partly carried away, being undermined by the action of the teredo. Here, a length of 50 feet at the southwest end was completed, except for close-piling, ballast and covering, and a further length of 50 feet begun, the 10 main piles being driven and two walings and one tier each of cross-ties and longitudinals placed.

Sixty-three feet of the quay face was rebuilt permanently, being faced with creosoted close-piles and filled with ballast. The levelling of the pier-head was completed over the remaining length of 250 feet.

During the fiscal year 1905-6, the placing of the walings, longitudinals and cross-ties at the second 50 feet section of the return was completed, and the remainder, 79 feet long, of the old slope, was removed, and the face rebuilt in the same way; 70 feet out of the whole length of 179 feet was faced with 12 x 12 creosoted close piles, 65 feet was fully ballasted and 114 feet ballasted, except for a width of 8 feet, along the outer face. The covering was laid except on an area 120 x 14 feet, left open to permit the completion of the ballasting. The top of this portion was built level throughout at 4 feet above H.W.O.S.T.

On the quay face, a length of 48 feet was brought up to the level of the new work, protected by 12 x 12 creosoted close-piling, filled with ballast and covered with plank; 21 creosoted piles were driven in addition to extend this work; 5 mooring posts were reset, and a new one placed.

The platform at the side of the freight shed, the side and end doors of the freight shed, and the covering, where damaged or torn up by a storm, were repaired; the freight shed was sheathed with deals for a height of 9½ feet, for a length of 29 feet on its side, and 9 feet on the end.

A platform for the winter traffic, 92 feet x 8½ feet, was built as well as a board track for trucks, 78 feet x 3 feet.

A small scow 20 feet by 12 feet was built; 800½ cubic yards of large stone were deposited outside the pier-head and along the faces of the approach. A quantity of lumber, bolts, &c., was procured for use in the work.

The expenditure for the fiscal year 1905-6 was \$13,252.09.

CARAQUET.

Caraquet, Gloucester county, a thriving fishing village, of about 2,500 inhabitants, is situated on the southern side of Baie des Chaleurs, 42 miles east of Bathurst, and 20 miles northwest of Shippegan, the eastern and western termini of the Caraquet Railway, on which, with the exception of Bathurst, it is the most important station.

In March, 1902, a contract for a deep water wharf for the shipment of lumber was entered into with Messrs. Simmons & Burpee, of Gibson, N.B.

The wharf is 1,700 feet long and consists of a shore block, 255 x 25 feet, 25 blocks, 25 feet square, 26 spans of 20 feet, and a pierhead 300 feet x 40 feet. The latter rests on a foundation which was dredged by the department in 1903, to 22 feet at low water.

Spring tides rise 6 feet.

The wharf is built of round timber in open cribwork, filled with ballast and covered with 4-inch plank. The openings are spanned with 2 double 12-inch by 12-inch

SESSIONAL PAPER No. 19

stringers, and 4 single 12-inch by 12-inch stringers supported by 12-inch by 12-inch corbels.

The contract price was \$59,990.

Construction began on July 7, 1902, and during the fiscal year 1902-3 was in progress on the shore blocks and blocks 1 to 9, inclusive. During 1903-4, the work was extended to block 24, and two curbs for the pier-head were begun.

At the close of the fiscal year 1904-5, the cribwork had been built to full height to the end of the blocks and for 100 feet of the pier-head, and sloped down to near low water level at the end of the pier-head. Fenders were complete to the end of the 16th block and for 50 feet of the pierhead, and the covering had been laid to the end of the 18th block and from block 23 to 50 feet beyond the inner end of the pier-head. The first 60 feet of the pier-head were sheathed with hardwood, down to 2 feet below low water level.

The work was completed on the 31st of October, 1905.

In spring, the ice from the upper part of Caraquet harbour carried by the ebb tide and northwesterly winds, strikes the wharf with great force. Considerable damage and delay were caused by this during construction. Therefore in March and April of 1906, two blocks were built, by day labour, about 200 feet from the western side of the wharf, to act as ice breakers for the protection of the blocks of the approach.

They are about 21 by 20½ feet on top and have a slope of 15 feet horizontal to 12 feet vertical, facing the northwest. The other sides and also the face below the slope are battered at the rate of 1 in 6. They are built of round timbers, thoroughly screw-bolted together under the slope, sheathed on all sides to below low water level with 6-inch hardwood plank and covered with 6-inch spruce. Their total height is about 23 feet.

They were built through the ice and were of good service when it moved early in May.

The ice, however, carried away the corner fenders at the northwest corner of the pier-head, and the fenders and sheathing for about 17 feet to each side of the corner, and tore out the double face timbers from the ends and sides and three longitudinal timbers. About 45 cubic yards of ballast were washed out of the work. This damage was repaired in June, 1906.

New longitudinals and face timbers were inserted, and fenders and sheathing placed. Screw bolts as well as drift bolts were used to secure them, and 5 feet 10 inches by 10 inches hardwood timbers were placed upright, inside the work, and screw bolted to the face for additional strength. The interior was refilled with ballast.

The work of grading and fencing the right of way, 1,200 feet long, from the wharf to the public road, was begun in June, 1906; 450 cubic yards of earth and rotten stone, all requiring picking, were removed. The total expenditure for the fiscal year 1905-6 was \$16,971.24.

CHANCE HARBOUR.

Chance harbour, St. John county. Timber required to build a small breakwater at this place, a cove in the Bay of Fundy, eighteen miles west of St. John, was delivered, and the work was begun in the spring of 1905. By the 30th of June in that year, the outer end had been built to a height of nine tiers and ballasted, the bottom tier being 80 feet in length.

In 1905-6, the work was brought up to sixteen tiers in height, at the outer end; and four tiers at the inner end, besides being extended to a length of 168 feet, the covering being laid for a distance of 60 feet.

The expenditure during 1905-6 was \$1,326.72.

CHATHAM.

Chatham, Northumberland county, with a population of about 5,000, is situated on the south bank of the Miramichi river, about fourteen miles from its mouth. It

6-7 EDWARD VII., A. 1907

is a station on the Fredericton branch of the Intercolonial Railway, and the second in importance of the New Brunswick deal ports.

Dredging was carried on by the *Peter England* dredge from the 5th to the 14th, inclusive, of June, 1906, outside the upper Snowball wharf at Chatham. The former depth of about 18 feet was increased to about 22 feet, at low water ordinary spring tides.

The total expenditure during the fiscal year of 1905-6 amounted to \$814.16.

CHOCKFISH.

Chockfish, Kent county, is a fishing and farming settlement at the mouth of the Chockfish river, which empties into Northumberland straits, about midway between Richibucto and Buctouche.

The works at Chockfish are intended to straighten the channel at the mouth of the river, which was formerly obstructed by shifting sand bars, and to render it deep and stable.

They consist of a dam, closing the old deflected channel, and the north and south breakwaters. The dam is 356½ feet long. It was begun in 1901-2 and extended in 1902-3. The north breakwater, 516 feet long, was built in 1903-4. The south breakwater, 214 feet long, was begun in 1904-5; it is a continuation of the dam.

The outer 84 feet of the south breakwater was built during the fiscal year 1905-6. It is 11 feet 6 inches out to out and consists of two rows of main piles, placed 6 feet apart in each row, and connected by 10 x 12 cross ties and 10 x 10 wallings.

The work is close piled on each side and filled with brush and stone. During the year 50 feet of the original southern breakwater, 48 feet of the dam, and the outer 120 feet of the northern breakwater were refilled with brush and stone, and a trench was dug to enable the river current to scour a passage through the bar which had formed southwards of the north breakwater, before the southern extension was built.

The resulting channel was satisfactory last spring, but as the river approached its low summer level, a sand bar formed just outside the entrance and somewhat impaired the channel.

The expenditure for the fiscal year 1905-6 was \$1,200.

DALHOUSIE.

Dalhousie, Restigouche county, is situated on the Restigouche river, fourteen miles below Campbellton. It has a population of about 1,200 and is an important deal port. Dalhousie harbour is one of the best in the province, being well sheltered and having a depth of from 4 to 7 fathoms at low water.

At a terminus of a branch of the Intercolonial Railway the department constructed, in 1887, a wharf 300 feet long, 22 feet wide on top, giving a depth of 14 feet at low water.

This depth has since been reduced through ballast having being washed out of the work. Dredging was performed by the *St. Lawrence* outside the wharf during the last season, and there is now a depth of 16 to 18 feet at low water 20 feet from the face.

On August 1, 1904, a contract was entered into with J. B. McManus, Ltd., for the construction of a deep water wharf immediately above the present government wharf. It is to be 304 feet long and 35 feet wide, built on a foundation dredged to 24 feet at low water. The contract price is \$42,000.

In August, 1905, the dredging required under the contract was performed, and on the 22nd of January, 1906, the cribwork was begun. By the 30th of June the cribs had been sunk and filled with ballast, and the upper ballast floor was laid.

The superstructure, beginning about the centre of the work, was carried up to within 5 tiers of the full height, at the eastern end.

The expenditure of the fiscal year 1905-6 was \$33,928.

SESSIONAL PAPER No. 19

DIPPER HARBOUR.

Dipper Harbour, St. John county. In 1904-5, a contract was let for the construction of a new breakwater at Dipper Harbour, a fishing station on the Bay of Fundy, 20 miles west of St. John. The work to be 335 feet long and 43 feet high at the outer end, is intended to replace an old breakwater and to give shelter to the fishing boats of the neighbourhood. By June 30, 1906, the superstructure at the inner end had been brought up to the level of the under side of the stringers, while the cribs of the outer end had been sunk in place, and built to within 8 feet of high water.

Expenditure during 1905-6, was \$17,758.04.

DURHAM.

Durham, the most easterly parish of Restigouche county, has a population of 2,200 occupied in lumbering, farming and fishing.

For the protection of the fishing boats and to facilitate the shipment of lumber, a contract for a breakwater was entered into on June 20, 1905, with Messrs. John and Joseph Goulette. On October 23, 1905, the contract was transferred to Messrs. J. & A. Culligan. The contract price is \$17,700.

The breakwater will consist of an approach, 670 feet long and 20 feet wide on top, and a pier-head or 'L' 50 x 30 feet, measured on the top, of round timber cribwork filled with ballast. The pierhead and the outer 600 feet of the approach will be sheathed with 4-inch hardwood plank.

Work was begun on September 1, 1905, and by June 30, 1906, all the cribs of the approach had been sunk in place; the covering was laid for a length of 216 feet; the stringers for 245 feet; and the round timber work was complete for 273 feet; the upper ballast floor was laid for 405 feet; the sheathing was complete for 165 feet, and the fenders for 245 feet. The crib for the pier-head had been built eight tiers high.

The expenditure for the fiscal year 1905-6 was \$13,548.50.

EDGETT'S LANDING.

Edgett's Landing, in Albert county, is on the west side of the Petitcodiac river, two miles below the village of Hillsborough.

To replace an old provincial government work, destroyed by the Saxby gale in 1869, the construction of a wharf was begun twenty years later by the department and was finally completed in the fiscal year ended June, 1893. The wharf is 400 feet long, composed of an earthen approach, 20 feet wide and 50 feet long; round timber cribwork 250 feet, and square timber cribwork 100 feet long. The head is 40 feet wide. Spring tides rise 46 feet. The pier-head, 35 feet high, stands in 30 feet at high water and is dry at low water.

Renewal of the covering, which had become decayed, and levelling up of the stringers, which had settled, was begun in May, 1900, and was completed in 1900-1.

During the fiscal year 1903-4, the approach, 270 feet long, was raised above tide level with brush and gravel, protected on each side by stone. Thirteen broken cross-ties were replaced with new ones, 12 feet in length; slight repairs were made to the covering and two new mooring-posts, 15 inches in diameter, were placed in position.

In 1904-5, the upper works having become decayed, the outer block, 100 feet long and 40 feet wide, was pulled down and rebuilt for 3 tiers in height, while the next stretch of 100 feet was also pulled down and rebuilt (excepting the top cross-ties) for the same height.

In 1905-6, these repairs were carried over the whole work, and the reconstruction of the top was completed.

The expenditure during 1905-6 was \$1,835.55.

6-7 EDWARD VII., A. 1907

FORT DUFFERIN.

Fort Dufferin, built by the imperial government, to command the western entrance to St. John harbour, stands on high ground, immediately above the end of Negro Point breakwater. In order to preserve from erosion by the waves the headland crowned by the battery, this department began in 1882, at tide-level, a retaining wall of sheathed cribwork, 430 feet in length, and in the following year, constructed a further length of 303 feet. The work is exposed on the one hand to the force of the waves, and on the other hand to land slips.

In 1886-87, it was much disturbed by the sea and repairs were made in that and the following years, 205 feet of the original work being rebuilt. From 1887 to 1889 repairs were also made, and 1890 the work was extended 100 feet.

General repairs were made in 1893-94. The work is from 7 to 14 feet wide on top, and about 9 feet in mean height. The crest for the whole length is surmounted by a break $2\frac{1}{2}$ feet high.

During the year 1896-7, a gap 81 feet long in the break was repaired, 200 lineal feet of longitudinals were renewed inside, and 128 cubic yards of ballast were restored to the work; while the sheathing was patched at intervals along the face with hardwood planking. In order to raise the beach, and so protect the lower part of the face, toward the end of 1896, a groyne 40 feet long, 10 feet wide and 4 feet in average height, was built of hardwood piles, timber and stone. In 1897, extension of the cribwork, a distance of 130 feet, was begun, and by the end of that fiscal year, had been brought within two tiers of the full height.

In 1897-8, the new extension was completed, ballasted and sheathed. Small repairs were also made to the sheathing of the old work.

In 1898-9, four groynes, in all 332 lineal feet, each built of hardwood piles, spaced four feet apart, driven from 9 to 12 feet into the bottom and planked with birch 9 inches square, securely strapped and bolted, were placed along the beach to protect the lower part of the sheathing of the breastwork, some ballast was also placed in the cribwork.

Ordinary repairs, comprising restoration of a breach in the face, ballasting and renewal of the sheathing, were made during the year 1899-1900.

In 1900-1, the face was sheathed for 145 lineal feet; 10 piles were driven to restore, with the addition of cribwork, a breach 11 feet long; 62 lineal feet of large hemlock face-timbers were inserted; some loose piles were rebolted; and 373 cubic yards of ballasting were placed in the work. At the upper end, the breastwork was repaired for a distance of 235 feet, by placing a new tier of 12-inch cross-ties, 395 lineal feet of face-timbers, and by the insertion of 24 knees, with as many chocks, secured by screw-bolts.

In 1901-2, 136 spruce piles, 26 feet long, were driven from 6 to 8 feet into the bottom for a distance of 108 feet along the face of the breastwork. In another place, for a total length of 126 feet, the face was sheathed with 6-inch spruce, and the old sheathing was patched at intervals for a distance of 210 feet. A break 3 feet in height was also constructed of 4 tiers of spruce timber, supported at intervals of 10 feet by 21 framed braces, made of 8 x 8 spruce. Some brush was deposited at the back of the innermost block of cribwork and beneath the adjacent groyne, for the purpose of assisting the accumulation of silt and drift.

In 1902-3, the face of the breastwork was protected, with close-piling, for a length of about 178 feet; 14 pieces of spruce sheathing were applied to the work, and about 40 cubic yards of ballast were placed. An extension of the protection was made for a distance of 94 feet, by driving close-piling, secured with double walings and stiffened by bracing, fastened to piles driven 13 feet in the rear. The inside of this work was partially filled with brush and stone.

During the fiscal year 1903-4, a new block, 70 feet long and 20 feet wide, of close-faced cribwork, was built at the inner end of the breastwork. The cap of this block is flush with the break of the old work.

SESSIONAL PAPER No. 19

In 1904-5, one of the angles of the work was sheathed with 6-inch plank; the braces and upper timbers, for a distance of 160 feet, were painted with carbolineum avenarius; 450 cubic yards of stone ballast were besides placed in the work.

In 1905-6, a length of 40 feet of the breastwork was sheathed, and a length of 70 feet, where undermined, was filled, ballasted and levelled off; the approach to the wharf was raised and the top, for a length of 130 feet, was coated with carbolineum. Seventy cubic yards of ballast were also placed in the work.

The expenditure for 1905-6 amounted to \$493.12.

GREAT SALMON RIVER.

Great Salmon river, St. John county, is a small tidal inlet, 8 miles east of Quaco. Shipments of lumber are made from this place to St. John.

A contract for the construction of a breakwater for the protection of the entrance to the harbour, was signed on the 27th of July, 1905.

By June 30, 1906, the work was 136 feet long, 21 feet wide and 10 tiers high, at the outer end.

The expenditure during 1905-6 was \$2,175.

LAMEQUE.

Lameque, Gloucester county, is a fishing and farming settlement of about 375 inhabitants, on Shippegan island, on the eastern side of Shippegan harbour.

In 1899-1900, a contract was entered into with Mr. Arcade Landry, of Shippegan, for the construction of a wharf at Lameque, 990 feet long, consisting of an approach 220 feet long, 16 blocks 25 feet square, 20 feet spans and a pier-head 30 by 40 feet; all of round timber in open cribwork; affording a depth of 9:8 feet at low water at the outer end. The contract was completed in January, 1903.

As it was found that the wharf did not afford sufficient accommodation for the numerous fishing vessels and foreign vessels in the fish trade that would make use of it, an extension to the pier-head, consisting of a cribwork, 75 x 30 feet, was begun in September, 1904, and at the close of the fiscal year 1904-5, had been built to a height of about 14 feet and sunk in place. The angle between the last span of the approach and the projection of the original pier-head was also filled in with stringers, covering and cap. The 75-foot extension was completed on November 11, 1905. Its height to the top of the covering is about 20 feet.

The expenditure for the fiscal year 1905-6 was \$1,100.

LOGGIEVILLE.

Loggieville (or Black Brook, as it was formerly called), is a thriving village of about 600 people, on the southern side of the Mirimichi river, 6 miles below Chatham, and is the terminus of the Fredericton branch of the Intercolonial Railway. A steamer of the Miramichi Steam Navigation Company calls here twice daily.

In 1901, a wharf was constructed under a contract with the department, consisting of a stone approach, 175 feet in average length and 20 feet wide on top, a span of 15 feet, and a pierhead of close-faced cribwork, 40 x 25 feet. This work lies immediately below the so-called 'Bentley' wharf and projects 49 feet beyond the face of the latter. The space, 120 feet long by 10 to 20 feet wide, between the two wharfs was, during 1902-3, filled with brush, stone and gravel, retained at the outer end by a pile bulkhead.

The Bentley wharf and a right of way from the public road were acquired by the department in the winter of 1903-4, and during 1904-5 work was in progress: (1) on the construction of a pile wharf with a creosoted timber face of piles and 6-inch sheathing, to fill the corner between the two wharfs and increase the frontage of the government

6-7 EDWARD VII., A. 1907

wharf from 40 to 96 feet; (2) on repairs to the Bentley wharf, raising it $3\frac{1}{2}$ to 4 feet higher than before, that is, to the level of the new pile wharf; (3) on the construction of an approach 505 feet long, from the highway to the public wharf, of which 163 feet is earth work and 342 feet cribwork, both 22 feet wide on top.

During 1905-6, a slip was cut in the pile wharf $6\frac{1}{2}$ feet wide and 2 feet below the top of the floor at the face. The original government wharf was raised 27 to 30 inches, or level with the pile wharf. The pier-head and span were raised with cribwork, also a strip, 9 feet wide and 175 feet long, along the easterly side of the approach and 3 mooring posts were placed.

Some 584 loads of gravel were placed in the wharf to bring it to the same elevation.

Some 303 lineal feet of 4-inch x 6-inch timber was laid in the middle of the cribwork roadway, to prevent excessive wear in the centre, and a low point in the earthwork approach was levelled with 32 loads of gravel and 8 of stone.

The expenditure for the fiscal year 1905-6 was \$999.50.

LORD'S COVE.

Lord's Cove, Charlotte county, a small fishing station on Deer Island, is a port of call for steamers plying between St. Stephen, St. Andrew's, Eastport, and other points in Passamaquoddy bay. To afford facilities for this steamer, the construction of a wharf was begun in 1900-1. Spring tides rise 24 feet.

The wharf, without the approach, is intended to be a pile and trestle work, 328 feet long and 21 feet wide, with a pier-head 33 feet high.

During the fiscal year 1902-3, this wharf was extended to the back of the pier-head a length of 120 feet, by driving twelve bents and by completing the laying of the covering and the cap. A gallows-frame, ladder and flight of steps were also made, in order that the public might make immediate use of the wharf.

The work was then 289 feet long, exclusive of the stone approach, 28 feet in length.

In 1903-4, the pier-head, 50 by 40 feet, was built, to which seventeen fenders and fifty-eight short braces remained to be applied. The work is now 328 feet long and 21 feet wide, with a pier-head 35 feet high. The wharf is approached by a stone embankment, 28 feet long, and a rock cutting 61 feet in length.

In 1904-5, materials for a movable slip were ordered, and in 1905-6, the slip was almost finished.

The expenditure in 1905-6, amounted to \$412.54.

MISCOU HARBOUR.

Miscou harbour, Gloucester county, lies between Miscou and Shippegan islands. On the eastern side only a small passage, known as Miscou gully, is left between the beaches extending from the two islands. The main entrance is from the west, from Baie des Chaleurs, and has a depth in the channel of five to seven fathoms, at low water.

On the 27th April, 1904, the department entered into a contract with Messrs. Burns and Charleson, for the construction of a wharf just inside the main entrance, on the Miscou side of the harbour. The contract price was \$13,700.

Work was begun in May, 1905, and by the 30th June of that year, the cribwork of the approach had been built to full height, blocks one to twelve had been placed and built from eight to six tiers high, and the pier-head was begun and built three tiers high.

The work was completed on October 14, 1905.

Its total length is 876 feet; it consists of a shore block 99 feet long by 20 feet; nineteen spans of 20 feet, and a pier-head 40 by 30 feet, being 30 feet in the general direction of the work; all of round timber in open cribwork.

The expenditure for the fiscal year 1905-6 was \$8,007.50.

SESSIONAL PAPER No. 19

MUD COVE.

Mud Cove is an inlet of Grindstone island, which lies at the mouth of Shepody bay.

For the protection of the boats of the lighthouse keeper and others, a small breakwater was built at this place in 1905-6, part of the materials having been procured in the previous year.

The work is 80 feet long, 15 feet wide on top and seventeen feet high. It is built of round timber and is surmounted by a break.

The expenditure for the year 1905-6 amounted to \$1,250.58.

NEGRO POINT.

Negro Point, St. John county, is a headland about 60 feet above high water mark at the western entrance to St. John harbour, which is formed by the estuary of the River St. John on the northern side of the Bay of Fundy. Spring tides rise 25-33 feet, neaps 15 to 20 feet.

In addition to convenience of position for distribution by rail of cargoes landed at the city of St. John, the harbour is remarkable principally for great tidal range, and for consequent freedom from ice in the winter months. The harbour is open, broadly speaking, from southeast to southwest, but southerly waves are broken by Partridge island, and southwest waves are mitigated by Negro Point breakwater, while the Foul Ground, a shoal trailing down from the peninsula on which the city is built, must have more or less effect in moderating the force of the easterly seas rolling round Mispic point.

By Partridge island, a rocky eminence devoted to quarantine and lighthouse purposes, the entrance of St. John harbour is divided into east and west channels. In the former or main channel, a minimum navigable depth of 19 feet is found on the bar at low water at ordinary spring tides. Two hundred yards inside the crest of the bar, a depth of five fathoms is obtained in the narrow fairway, while higher up and between the most southerly of the principal wharfs on either side of the harbour, (450 yards wide at that point) twelve fathoms are given in mid-channel. The west channel 10 to 14 feet deep at low water, and originally 1,200 yards wide, has been contracted to about as many feet in breadth by Negro Point breakwater, which extends 2,200 feet southeast by south from the headland so styled.

The reasons for undertaking this work are thus stated in the reports of the Minister of Public Works for 1875 and 1882:

'1875. This breakwater extends southeasterly from Negro Point at the western entrance of St. John. When completed it will extend a distance of 2,250 feet, closing up the west channel to that extent, leaving, however, a width of 1,000 feet between the outer end and Partridge island. The object is to break the force of the seas which roll into the harbour of St. John during the southwest gales in the Bay of Fundy, and which render it dangerous and almost impossible at such times for vessels to make the harbour.

'1882. Southwesterly winds threw in a heavy sea through the western channel which rendered it difficult for vessels to make the harbour, as they were in danger of being carried on the Foul Ground on the eastern side of the channel. In the spring of 1875, a breakwater 2,250 feet long to partially close the western channel was begun, and in September, 1877, completed.'

Reference to the chart will show that as long as the present opening remains, the object of the breakwater has been only partially fulfilled. In dealing with the reduction of the bar, a more cogent reason than improvement of shelter may be found for the extension of the work to Partridge island.

The breakwater consisted at first of a cribwork core, 30 feet wide at the base, and 15 feet wide at the top (5 feet above high water ordinary spring tides) protected on both sides by large stones sloping to seaward at the rate of two to one, and land-

6-7 EDWARD VII., A. 1907

ward at the rate of one to one. In the month of February, 1879, thirteen hundred lineal feet of cribwork were swept away to a depth varying between 13 and 19 feet from the top, the stones having been raked down by the wave action to a slope more nearly resembling the angle of repose of the material. In 1880, temporary repairs were made, and in 1881 a contract, completed six years afterwards, was entered into, whereby the lost cribwork was replaced by heavy stones and the seaward slope made three to one. Even this flatter inclination proved too steep for stability; consequently, notwithstanding their size, the stones, though smoothly laid, were soon displaced by the sea. A length of 50 feet of the breakwater extending at full height beyond a masonry pier, built under the same contract to support a beacon, was also swept away. From 1891 to 1894, desultory repairs were made by the addition of large stones, chiefly deposited about the end to prevent the lighthouse from being undermined.

In May and June, 1895, four large blocks of concrete were placed for the same purpose in front of the base of the pier. In 1895-6, seven concrete blocks, founded about the level of low water neaps, were built in situ round a quadrant of the outer end to receive the foot of a slope proposed to be made of heavy granite blocks, laid at the rate of four to one. The concrete blocks were from 59 to 91 tons each in weight, all but the heaviest being laid in one tide. The granite pier was also reinforced by a semi-circular skin of concrete, 7 feet in average thickness and strongly battered, placed round the front and brought to the level of high water spring tides. The footing blocks were 15 feet long, 12 feet wide and unless varied for the sake of foundation, three feet high in the face, sloping upward at a rate of four to one at the top. Each block was free to settle independently, but all were keyed together by splayed concrete joggles. Inside a part of the space within the quadrant, stones of the original work added to small granite were assembled and grouted, as far as funds permitted. This course was taken in default of the heavy granite (which would require special plant) necessary for the slope of this breakwater, where weight is a great desideratum.

To this end fifteen blocks of concrete, forming aprons, were laid in position at the outer end of the work, between October, 1896, and June, 1897. A quantity of stone which had been swept round the point of the breakwater from the seaward to the harbour side, was also replaced in position. Some of this stone was laid outside the heavy footing blocks, built in the previous year, and some was applied to restoration of the crest of the work, at the back of the lighthouse. Breaches carried below the level of high water had been made by the sea at five or six points, in the rubble mound between the lighthouse and the shore. An illustration of the violence of the seas which assail Negro Point breakwater is afforded by the removal of a stone (which weighed five tons) a distance of 76 feet in one winter.

A marine dynamometer, secured to the masonry of the lighthouse, records the wave-force at 4,000 pounds and upwards per square foot.

In order to retain for natural protection, along the seaward face of the work, the littoral drift formerly swept by the waves over the top into the harbour, a break of piles, brush, stone and timber, 270 feet long, 8 feet wide and 4 feet high, begun in 1895, was completed in 1896-7, and was also extended 140 feet along the timber work in that year with good effect. As a result of the construction of the break, the foreshore has advanced seaward, while the beach has increased in height and breadth.

Besides the general accretion of the beach, a tongue of drift, observed after the erection of the break to be near the shore, has at the foot of the talus on the seaward side, travelled 200 yards or more toward the outer end of the breakwater.

The formation of this spit, generally 10 feet wide and 2 feet high against the work, indicates that the drifting sand, gravel, shingle, &c., which formerly went over the breakwater into the harbour will in time afford important natural protection to the work, and will reduce the length of the face to be maintained.

During the year 1897-8, as a measure of precaution, 152 yards of granite were obtained and deposited about the lighthouse, for protection during the winter, while stones previously removed by the sea were replaced in position.

SESSIONAL PAPER No. 19

The advance of the foreshore rendered necessary in that year the enlargement of the timber break, which was extended a distance of 80 feet along the breakwater.

A small groyne was also built for the purpose of obtaining some information as to the quantity of the littoral drift near the shore end. To preserve the timber, the top of the piles and the knees of the break were given two coats of pitch.

One thousand and nineteen cubic yards of granite were supplied and laid in place in 1898-9; while 285 yards of the original stone of the work, displaced by the sea, were restored to position.

During 1899-1900, 414 cubic yards of granite were delivered and placed around the lighthouse. Six hundred and six cubic yards of dislodged stone were put back. Five concrete blocks, containing 52.1 cubic yards, were also laid in place.

In 1900-1, five blocks of concrete, aggregating 54½ cubic yards, were built in situ; 1,313 cubic yards of new granite were received and placed, while 1,893 cubic yards of the original stone of the breakwater, removed by the sea (which on November 8, 1900, made two clear breaches through the work) were restored to position. The timber break was also extended two tiers for a distance of 40 feet.

During the year 1901-2, 4,694 cubic yards of large stone, principally granite, together with 719 cubic yards of small stones, were delivered and placed in position. A number of large stones of the original work, amounting to 1,713 cubic yards, which had been dislodged by the sea, was restored to place by means of a floating steam derrick. Repairs were also made to the derricks and buildings.

During the fiscal year 1902-3, 4,603 cubic yards of large and 600 cubic yards of small stone, were delivered and placed at Negro Point breakwater. This material was chiefly applied to restoring the point of the breakwater to the original length; that is, by extending it 50 feet beyond the lighthouse. Although, the stones were of large size, averaging a little less than 1½ cubic yards (while some attained the bulk of 5, 6 and even 7 cubic yards each) a part of the restored point was swept away by the heavy storms of the winter. Besides the new material added to the work, 2,201 cubic yards of the original stone of the breakwater, which had been dislodged by the sea, were, by standing or floating derricks, shifted and replaced either on the point of the breakwater or in the gaps made in the crest. The covering of the cribwork was also patched in places, the plant overhauled and a derrick for hoisting boats erected near the shore end.

Until the work has either been extended to Partridge island or has received a permanent superstructure, constant repairs will be required.

In 1903-4, 12 blocks of concrete, aggregating 417 cubic yards, were made in place. Before the concrete was made, 124 cubic yards of large stones, taken from another part of the work, were placed round the lighthouse for protection. The break was raised 2 feet in height for a length of 175 feet.

During the year 1904-5, 1,123 cubic yards of granite were delivered, a stone-breaker was hired, and the whole was crushed to the size required for concrete. Thirteen large blocks of concrete, aggregating 599 cubic yards, were made in place; 519 stones, averaging ¾ of a cubic yard each, which had been dislodged by the sea, were replaced in position; a boat landing was built of concrete; a lighter 43 feet long and 15 feet wide, was built for transporting material from the shore to different parts of the work; a plank walk, 900 feet long and 4 feet wide, covered with two coats of carbolineum avenarius was laid along the top of the works, below Fort Dufferin to give access to the works at Negro Point; new derricks were made, the roofs of the buildings were repaired and the plant maintained generally.

In 1905-6, 1,041 cubic yards of granite were delivered, a stone crusher and engine were purchased and the whole of the stone crushed to the size required for concrete. Twenty-four blocks of concrete, equal to 788.6 cubic yards, were made in place, bags of concrete were placed beneath blocks which were undermined, other blocks were backed up with the original stone of the breakwater, scows were caulked and repaired, and the whole plant was maintained and kept in order.

The expenditure during 1905-6 was \$19,995.11.

19-iv-7½

6-7 EDWARD VII., A. 1907

NEWCASTLE.

Dredging.

Newcastle, the shire town of Northumberland county, has a population of about 3,000, and is situated on the north side of the Miramichi river, five miles above Chatham.

Dredging was asked for in the municipal slip, which is the only public landing place for schooners, fishing boats, &c., and the most convenient point for general trade. The slip is 100 to 110 feet wide and about 400 feet long.

A survey was made in May, 1905, when it was found that the average depth at the mouth of the slip was about 9.5 feet at low water ordinary spring tides, decreasing to about 0.1 feet above low water 100 feet within, 0.5 feet 180 feet within and 0.9 feet above low water, 250 feet within the slip.

Dredging was carried on during the summer and at the close of the work, towards the end of July, soundings showed an average depth of 10 feet at low water ordinary spring tides at the mouth of the slip, 4 feet 100 feet within 2.2 feet 180 feet within, and 0.5 below low water ordinary spring tides 250 feet within the slip. The dredging ended about 260 feet from the mouth of the slip.

Spring tides rise 6 feet.

The total amount removed was 3,750 cubic yards barge measurement.

Expenditure during 1905-6, \$3,000.

NORTHWEST MIRAMICHI.

Dredging.

The Northwest Miramichi, an important lumbering river, unites with the Southwest Miramichi to form the Miramichi river proper about one mile above Newcastle, or twenty-one miles above the mouth in Miramichi bay. At the junction of the two branches the river is about three-eighths of a mile wide.

The Northwest Miramichi is generally navigable for light draught tugs and river steamers to Redbank, twelve miles above the junction, and for sea-going vessels to 'Sinclair's' at the Northwest Miramichi bridge, three miles above Newcastle.

One and a quarter miles below Redbank, and opposite the Northwest Miramichi boom, a bar occurs over which there was formerly a least depth of only about 2½ feet at low water ordinary spring tides. A considerable improvement was effected here in the summer of 1904, and whereas before the dredging, the river steamer would remain aground for hours at low water, during the last season no difficulty was experienced in passing at all times of tide.

The next serious obstacle is the Mullin's wharf bar, where the channel crosses the river, about 3½ miles below Redbank. A least depth of about 4 feet at low water spring tides was here found. Below this bar the depth is 8 feet or more at low water ordinary spring tides.

On August 7, 1905, an agreement was made with Mr. F. A. Fowlie, for dredging on the Mullin's wharf bar. The depth to be reached was 7 feet at low water ordinary spring tides, for a width of 60 feet, the length between 7 feet contours being 1,500 feet.

The work was discontinued on October 6, at which date a total of 8,097 cubic yards of material, chiefly sand, had been removed.

A sufficient depth was obtained for the passage of the river steamers at all times of tide, and, except at low water, for the tugs frequenting the river.

About 1½ miles above Newcastle a bar occurs over which a depth of only 13½ feet at low water and 19½ feet at high water of spring tides, and on which lumber steamers loaded at Sinclair's often ground.

Work by the *Peter England* dredge began here on June 25, and by the 30th, 518 cubic yards of material had been removed.

The expenditure for the fiscal year was \$4,996.21.

SESSIONAL PAPER No. 19

PARTRIDGE ISLAND.

Partridge island is a rocky eminence standing at the mouth of St. John harbour, dividing the entrance into east and west channels. The island is devoted to quarantine and lighthouse purposes.

At the northern end of Partridge island, two narrow piers of cribwork, built many years ago, give shelter to the boat landing at the station. Between them, a substantial block of new cribwork, 50 feet long and 22 feet wide, begun and nearly finished in 1896-7, as a foundation for the disinfecting house, was completed in the succeeding year. A boat slip, intended for use at low stages of the tide, was partially built, a new mooring-post was put in, and minor repairs to the end of the west pier were made at the same time.

In the fiscal year 1902-3, the west pier of Partridge island, 121 feet long and 17 feet wide, was raised by the addition of one tier of cross-ties, new stringers, covering and cap. A house 14 x 24 feet, was built for the boat of the medical officer and a new derrick (excepting the mast) was made for the purpose of launching or landing the boat, the weather being too rough in the winter to allow it to lie afloat.

From the east pier, 110 feet long and 20 feet wide, 11 fenders were removed and were replaced by new ones. The break was strengthened by the addition of 7 new knees; the boat-shed was shifted; the derrick rebuilt and a new cap laid. The top was also covered throughout with two thicknesses of 2-inch plank.

During the fiscal year 1903-4, the approach of round timber cribwork, to these piers was reconstructed. This part of the work is 75 feet long on the centre line, 16½ feet wide on top and 14 feet high, with an additional platform 17 x 18 feet. The top was covered with hemlock plank and a hand-rail was put round it. Ballast floors 30 feet in length composed of double deals, 3 inches thick, were placed in the west pier and covered with 4 feet of ballast. Five bays of the inner face were sheathed to prevent the loss of ballast, for a height of 8 to 18 feet and the ballast, which had been washed into the slip and obstructed the boat landing, was removed.

In 1904-5, the faces of the piers were sheathed for a length of 110 feet, a slip was built, a gangway was made and the ladders were repaired. A small block for the landing of immigrants was built on the outside of the west pier.

In 1905-6, the ladders were renewed.

The expenditure during 1905-6 was \$49.98.

PETIT ROCHER.

Petit Rocher, Gloucester county, is a farming, fishing and lumbering settlement on the southwestern side of Baie des Chaleurs, 12 miles north of Bathurst.

To provide shelter for the fishing boats of the district, and for those crossing from Bonaventure county, P.Q., and for vessels engaged in lumber-carrying and general trading in Baie des Chaleurs, a contract for the construction of a breakwater was entered into on May 31, 1904, with Mr. Simon McGregor, of Dalhousie.

The work will consist of a main breakwater, 209 feet long on the outside face, and an 'L' placed at an angle of 74° 30' with the main part, 160 feet long on the outer face. The width on top will be 30 feet. At the nearest point the breakwater will be 480 feet from the shore, and it will lie in from 12 to 19 feet of water at L.W.O.S.T. The contract price is \$32,900.

In 1904-5, a right of way, 860 feet long, from the public road to the shore, was opened up, graded and fenced. The contract work was begun on March 18, 1905, and by the end of the fiscal year two cribs had been built and sunk in place, the first, 96½ feet long, 36 feet wide at the base and 21 feet high, filled to within a foot of the top with ballast; the second, 41 feet long, 35 feet wide, at the base, and 15 feet in mean height, about half filled with ballast.

A crib to form the remainder of the work was started on February 19, 1906, but on March 11, when it had reached a height of about six tiers, it was carried away by the ice. It was, however, recovered on May 14. The outer section, which was intended

6-7 EDWARD VII., A. 1907

to complete the main part of the breakwater, was found to be intact and work on it was then resumed. By the end of the fiscal year, this crib had been built to a height of nineteen tiers. It will be 112½ feet long by 30 feet wide on top. The two cribs sunk last year had been filled with ballast and built up to half tide level, and the upper ballast floors were laid.

The expenditure for the fiscal year 1905-6 was \$11,587.40.

POINT DU CHÉNE.

Pointe du Chêne, Westmoreland county, lies on the western side of Northumberland straits and on the southeast side of Shediac harbour. It is the terminus of a branch line of the Intercolonial Railway and for the steamer *Northumberland* running during the season of navigation from Summerside, P.E.I.

The works at Point du Chêne consist of two breakwaters, an inner and an outer, each 600 feet long, with an opening between of 80 feet, and a ballast wharf 200 feet long, connecting the outer breakwater with the Intercolonial Railway wharf. They have been repaired or rebuilt at various times.

A storm, on November 14, 1904, carried away the covering, stringers and sheathing for a length of 150 feet, near the outer end of the outer breakwater. The greater part of the remaining timbers of this section were removed down to near low water level before June 30, 1905 and during the fiscal year 1905-6 rebuilding with a close vertical face was in progress. The new work started at low tide level with a length of about 130 feet and was completed, except for the covering and cap, for a length of 100 feet at the top. Some 3,398 cubic yards of mixed stone were deposited to form a stone slope, outside the outer breakwater.

The expenditure for the fiscal year 1905-6 was \$14,995.75.

QUACO.

Quaco, St. John county, is on the northern coast of the Bay of Fundy, about thirty miles to the north eastward of the entrance to St. John harbour. The bay is semi-circular, and lies open to the southeast between Quaco Head and Macomber Point, some two miles apart, the breadth from a straight line drawn between these capes being about a mile. At the mouth of a small river, discharging into the eastern end of the bay, a harbour of refuge has been formed by the construction of two piers, the eastern work, 310 feet long, built in 1873, and the western, 302 feet long, built in 1882-3. The harbour is dry at low water and is only accessible for about six hours during each tide, to the coasting vessels, which come to load timber or to seek shelter. Spring tides rise 30 feet; neaps 23.

In 1886-7, small repairs were made by the expenditure of \$198.63.

The west pier was damaged by a storm in 1889, and repaired in the following year at a cost of \$557.57.

In 1891-2, both piers received general repairs, the sum of \$1,350.82 being expended.

In 1893, the west pier was damaged and was repaired for a length of 100 feet at cost of \$999.88.

In 1896-97, repairs were made to the west pier for a distance of 149 feet, the sheathing of the sloping face and several face-timbers being renewed with birch, 14 inches square secured with screw bolts, and a quantity of ballast being replaced. A couple of fenders and a ladder were also added. At the same time, the east pier was protected from scour of the stream by brush and stone, thirteen new fenders were supplied and the decayed tops of five others were replaced by sound material. Small repairs were also made to the covering and sheathing, and another ladder was provided. The whole expenditure in that year amounted to \$1,377.51.

In 1897-98, a sum of \$50 was applied to closing a small opening and strapping the angle of the west pier, which had been struck by a schooner.

SESSIONAL PAPER No. 19

In the fiscal year 1902-03, the sloping face of the east pier was reconstructed for a length of 70 feet, the outer end being 10 tiers in height, and the inner 7 tiers in height.

In 1903-04, the repairs to this face were completed and were extended for an additional length of 19 feet, the whole being covered with sheathing. Four new mooring posts were inserted; a new corner fender was placed, and the cap and covering received minor repairs. Some pieces of sheathing were placed on the west pier.

In 1904-05, repairs were made to the upper works of both the east and west piers, comprehending renewal of the cap, top tiers (in great part), stringers and covering.

In 1905-06, the renewal of the covering on the west pier was completed, while the upper works of the east pier were pulled down and rebuilt, the renewal including the top tier of cross-ties, 7 rows of stringers and the covering.

The total expenditure to the 30th of June, 1905, amounted to \$41,078.46.

The expenditure for 1905-06 was \$1,130.

RICHIBUCTO.

Richibucto harbour, Kent county, lies on the eastern side of Northumberland straits, about 26 miles south of the entrance to the Miramichi bay and 40 miles north of Shediac. It is one of the New Brunswick deal ports and the terminus of the Kent Northern Railway.

The entrance to the harbour is between two sandy beaches known as 'North Beach' and 'South Beach.' The works originally proposed for the improvement of the harbour were two breakwaters, one to extend from the southern point of the north beach, and the other to run in a northeasterly direction from the south beach, the object being to confine the water to one permanent channel and so scour the bar at the entrance.

In 1873 and 1874, works were commenced, by the construction of a breakwater or pier, 1,200 feet long, off the north beach. This was subsequently extended westward at various times, to stop erosion of the beach, up till 1891, when a total length of 2,158 feet had been built.

Between 1891 and 1903, in consequence of damage and decay, repairs and reconstruction were carried on at different sections of the work, and a number of groynes and breastworks were built from both the outside and inside of the main work to protect the latter and raise the beach.

In 1901-02, an extension to the breakwater was begun and partially built for 130 feet out of a proposed total length of 315 feet. It begins at a point 300 feet from the original end of the breakwater and runs in a southeasterly direction.

In 1902, a contract was let for the completion of this work and for a protection work running westerly, along the harbour side of the old structure, for a distance of 800 feet, starting from the inner end of the extension. This contract was completed on the 30th November, 1903.

The extension consists of brush mattresses (74 feet wide on the bottom), weighted with small stone, through which three rows of piles, 5 feet apart, are driven, and on which a rubble mound is laid 12 feet wide on top, finished with large stone sloping at the rate of 2 to 1 on the sides.

Part of the materials for a further extension, 300 feet long, of similar construction, were procured during 1904-05, at a cost of \$859.55. A contract for this extension was entered into on the 16th November, 1905, with Mr. John Jardine. Work began on the 1st May, 1906, and by the 30th June, 238 fascines, from 40 to 72 feet long, had been made and a mattress 66 x 70 feet was placed in position. This, however, was partly destroyed by a storm after being loaded with two scow loads of stone. A start was made on a second mattress and also on preparations for driving piles. During the fiscal year, the three buildings on the beach belonging to the department, also the government engine and boiler, pile driver, derrick and boat were repaired.

The expenditure for the fiscal year 1905-06 amounted to \$5,483.85.

6-7 EDWARD VII., A. 1907

RIVER ST. JOHN AND TRIBUTARIES.

The River St. John, proper, 450 miles long, takes its rise from sources in the province of Quebec and the state of Maine, at a reputed maximum altitude of 2,159 feet above sea level. Entering New Brunswick at the confluence of the St. Francis, a little below the borders of Quebec, it continues to be the international boundary almost to Grand Falls, and after flowing through the province for nearly 300 miles, by way of the counties of Madawaska, Victoria, Carleton, York, Sunbury, King's and Queen's, discharges into the Bay of Fundy, at St. John. Many tributaries, some being of considerable magnitude, are received by the main stream. Among them are the St. Francis, Madawaska, Green river, Grand river, Salmon river, Aroostook, Tobique, Presqu'Isle, Meduxnakeag, Nackawick, Eel river, Keswick, Nashwaak, Oromoco, Jemseg (Grand lake) Washademoak, Belleisle and Kennebecasis. Except the last five which are slightly tidal for some distance, they are fresh water streams.

The total basin from source to mouth is computed to be 26,000 square miles, an area almost equal to the whole of New Brunswick, but as a part of the watershed lies outside, only a little more than one-half the province is drained by the river. The St. John is considered navigable for vessels 15 feet in draught for a distance of more than 50 miles from the mouth, but no positive information on this point has yet been obtained. About 8 feet at low water can be carried to Fredericton, 84 miles from the sea, and 6 miles below the head of tide at Springhill. Three natural features of the river are remarkable, viz.:

The tidal falls, Grand Falls, and the annual floods.

Although in summer the fresh water stream between Woodstock and Fredericton is in places 400 to 1,000 feet wide, expanding at the latter place after reaching tide level to half a mile in breadth, yet the actual mouth of the river (a rocky gorge 400 yards long, immediately at the head of St. John harbour) measures but as many feet across at high water. Here at low water, the level of the river is from 11 to 15 feet above the sea, and as the ordinary tides flow from 23 to 27 feet, the sea level at high water is from 8 to 13 feet higher than the waters of the river. Thus there are two falls at every tide, viz.:—one outward and one inward, and vessels can only pass when the waters of the ocean and the river are on a level. This occurs only for a space of about ten minutes during each ebb and flow of the tide; at all other times it is either impassable or extremely dangerous. (Admiralty Sailing Directions.)

At Grand Falls, 223 miles from the sea, the whole volume of the river plunges over an almost perpendicular face of limestone 60 feet high, into a deep ravine 250 feet across, somewhat similar to the narrow pass at St. John. Flanked for nearly a mile by lofty rugged cliffs, the confined current dashes from the foot of the falls with excessive strength, mining deep pot-holes in the rocky bottom of the channel in the course of a further descent, estimated to be slightly less than the first. In the harbour of St. John, ordinary spring tides are considered to rise 25½ feet. At the wharfs of the river steamers, a mile above the falls, while summer range is about 3 feet, the highest flood mark is given as 17 feet above extreme low water. At Oromocto, 73 miles from the sea (where the tidal range is from 10 to 12 inches), the flood of 1887 reached a bridge 20 feet above low water. At Andover, 200 miles from the sea, floods attain an elevation of more than 27 feet above summer level. By contrast, the Tobique and St. Francis swells 9 and 6 feet respectively. After the first spate, due to the melting of the snow in the catchment basins of the Kennebecasis, Belleisle bay and Washademoak, a secondary flood occurs, caused by the back water of the main river, which is fed from sources farther north, and consequently later in thawing.

The harbour of St. John is open all the year round, but the river is ice-bound from November to April, an average period of 144 days. The water usually begins to rise in April, reaching flood pitch early in May, and maintaining a high level for two or three weeks. By the middle or end of July, the water has fallen to summer level, a stage lasting, with some variations, dependent upon the rainfall, for about 60 or 70 days.

SESSIONAL PAPER No. 19

In addition to a little coal, a considerable quantity of cordwood, and the ordinary food supplies yielded by the farms of a lengthy fertile valley, the trade of the river comprehends an abundance of valuable timber, fluctuating each season in amount, but generally at least equal to 135 million superficial feet annually. Most of the logs are floated loosely down the tributaries and upper river to Fredericton, some being manufactured there and shipped coastwise or to the United States. The remainder, or major part, towed from the provincial capital to St. John in rafts, giving employment to a fleet of tugs.

For the purpose of works, three divisions may be made of the river.

1. Tidal navigation, for the steamers and sailing vessels between St. John and Fredericton, 84 miles, requiring 11 feet at low water. Principal obstructions: the Oromocto shoals about $1\frac{1}{2}$ miles; the middle ground above Oromocto island, about 1 mile; and the shoals abreast Fredericton, rather more than $\frac{1}{2}$ mile in length. The last are now dredged but the other obstacles remain.

2. Inland navigation, from Fredericton to Woodstock, a distance of about 65 miles, requiring $3\frac{1}{2}$ feet at low water. The obstacles to inland navigation, besides boulders in some places, and perhaps bed-rock at Meductic, are shoals of material more or less coarse, according to the strength of the current, varying in composition from sandy gravel to stones. The chief bars are at Springhill and Bear island; while Knapp's, Perley's, Coac, Nackawick, Belvisor, Moore's, Bett's, Dibble's and Bedell's bars with Meductic rapids, according to present information, constitute lesser obstructions. Dividing above Springhill into two main channels, and from a general width of 350 yards opening to a stretch of $1\frac{1}{2}$ miles between banks, with a waterway increased by one-third, the river becomes dotted with eyots and shallows. Two gravel shoals, known as the Russell and Chapel bars, together about $\frac{1}{2}$ mile in length, compose the obstacle at Springhill. At Bear island, 25 miles above Fredericton, in consequence of another division of the river into three channels, aggregating 600 yards in breadth, a shoal of gravel and stones, 1 mile long, giving 21 inches at low water, has been formed. Besides dredging, a long training dyke will be necessary for the maintenance of the channel. After reuniting below the island, the width of waterway in the single channel is only 250 yards.

3. The Upper river, including with the tributaries all that part above Woodstock. This division is now used for the passage of timber only. On some of the tributaries beyond the reach of railways, supplies for the lumber camps are transported in tow-boats, for which channels are required to be made and tow-paths provided.

SECTION 1.

Tidal Navigation.—The tidal compartment of the River St. John comprehends, besides the main stream navigable by steamers which run daily between St. John and Fredericton, a distance of 84 miles, four tidal arms, all navigable by wood boats and regular passenger steamers, the extent of the whole tidal navigation being as follows:

Main River, St. John	84 miles long.
Kennebecasis	24 "
Belleisle Bay	12 "
Washademoak Lake	27 "
Grand Lake and Salmon River	35 "

Total extent 182 miles.

For the convenience of steamers and other craft navigating the main river and its branches, the provincial government has erected a number of wharfs, towards which the department has made contributions amounting to one-half the certified cost.

During the year 1901-2, assistance was given to a number of these wharfs, \$3,000 being available for that purpose; while in the fiscal year 1902-3, \$4,813.14 was applied to the same object.

6-7 EDWARD VII., A. 1907

In 1905-6, contributions aggregating \$3,293.82 were made by the department to six of these wharfs.

Lower Lincoln (Sunbury).—The wharf at Lower Lincoln was repaired. The body of the wharf, 55 feet long and 40 feet wide, received some ballast, new stringers and new covering. The sloping-face, 95 feet long, was given new sheathing throughout. The approach, 55 feet long and 20 feet wide, was made up with earth, brush and gravel. Two new mooring-posts and four ring-bolts were placed in position. A new cap-timber, 55 feet long, was placed on the river face.

The expenditure amounted to \$274.74.

Inland Navigation.—During the fiscal year 1905-6, a sum of \$50.50 was applied to removing boulders between Fredericton and Woodstock.

The upper river, comprehending many branches, including the Tobique, Green river St. Francis, &c., &c., extends from Woodstock to the northwestern boundary of the province. Navigation on the upper river is confined to the passage of timber and rafts or to the tow-boats which convey supplies up the streams, from the end of the railways to the lumber camps, situated beyond the lines of ordinary communication.

Little Tobique (Victoria).—At White Fish Pool on the Little Tobique, a crib-work dam, 220 feet long, 20 feet wide and 7 feet high, was built, together with a wing 70 feet long, similar in width and height to the dam. Stone being scarce the work was weighted with large logs.

The expenditure during the year amounted to \$300.

Serpentine river (Victoria).—At Little Falls, two miles above Big Falls, on the Serpentine, 108 cubic yards of rock were blasted and hauled to the bank of the river.

The expenditure during the year amounted to \$200.

At Big Falls on the same stream, a cribwork pier, 54 feet long, 12 feet wide and 9 feet high, was sheathed and covered with 6-inch birch plank, besides being strengthened by 40 spruce logs. A new pier 120 feet long, 40 feet wide and 6 feet high, was built from the foot of Big Falls to an island. Ten cubic yards of stone were blasted at the foot of the falls.

The expenditure during the year amounted to \$300.

Sisson Brook (Victoria).—Sisson Brook, the most westerly of the head waters of the Tobique, discharges into that river at the forks. At a point six miles above the mouth of Sisson Brook, a timber dam, 150 feet long and 16 feet high, with three gates 7 feet in width, was built.

The expenditure during the year amounted to \$300.

Plaster Rock to Red Rapids (Victoria).—Between these points, channels, 60 feet wide and 4 feet deep, were scraped through nine bars, 360 rods in length. Forty-seven rocks, equal to 32 cubic yards, were blasted and removed from the river bed.

Expenditure during the year amounted to \$150.

Red Rapids (Victoria).—At this place, a channel, 40 feet wide, 3 feet deep and 247 feet long, was made by blasting 63 rocks, aggregating 88 cubic yards.

Expenditure during the year amounted to \$150.

Little River (Victoria).—A cribwork dam 300 feet long and 10 feet high, with an apron covered with earth, was built at a point three miles from the mouth of Beaver Brook, a tributary of Little River, situated fifteen miles from the mouth and from the River St. John.

The expenditure amounted to \$400.13.

Aroostook river to River Des Chutes (Victoria).—Between the mouth of the Tobique and River des Chutes, 237 cubic yards were blasted at Craig's Rocks and 91 cubic yards inside Tobique rock. A land-slip on the tow-path at Baird's Landing, 61 feet long and 5 feet deep, was cleared away and five trees, obstructing the tow-path, were removed.

The expenditure during the year amounted to \$149.99.

Grand Falls (Victoria).—One hundred and fifty-two cubic yards of rock were

SESSIONAL PAPER No. 19

blasted at Pilot Rock and round Grenier Eddy. Three days' work of the men were applied to rolling off the lodged logs from the rocks in order to reach them.

The expenditure amounted to \$500.

At the foot of the falls, 347 cubic yards of rock were blasted.

The expenditure amounted to \$499.99.

Grand Falls to Aroostock (Victoria).—Between these points, rock was blasted and removed at the following places :

Rapide de Femme Rock	27 cubic yards.
Greasy Point Rock	32 "
Toner Rock	19 "

The expenditure during the year amounted to \$200.

Green river (Madawaska).—At Little Forks, Green river, a dam 150 feet long and 10 feet high, with a gate 9 feet wide, was constructed. Two cribwork abutments 12 feet long, 10 feet high and 8 feet wide, were also built. The dam was faced with poles and covered with earth. One hundred and twenty-six rocks were also blasted and hauled up on the bank between a point 5 miles from the mouth of Little Forks and Watson Brook, a distance of two miles.

The total expenditure was \$350.

On Little river (in Green river) a tow path 5 feet wide was cut on both sides of the stream from the forks (two miles from the mouth) for a distance of 5 miles, and 18 rocks, equal to 42 cubic yards, were blasted. On the right hand branch, a tow-path, 5 feet wide, was cut for a distance of 5 miles, while four shear dams of cribwork, each 40 feet long, 10 feet wide and 5 feet high, were built.

The expenditure amounted to \$300.

Trout river (Madawaska).—At this place the dam was repaired ; a gate 8 feet square was put in, and a sluice, 18 feet long, 8 feet high and the same width, was built. Fourteen rocks, equal to 22 cubic yards, were also blasted at the foot of the dam. In the distance of 5 miles from Bossé's dam down stream, 122 rocks, equal to 53 cubic yards, were blasted and hauled to the bank. The total expenditure was \$150.

Bossé island (Madawaska).—At this place, 225 cedar logs, 14 feet long and 10 inches in diameter at the small end, were delivered for the purpose of building a wharf.

The expenditure during the year amounted to \$100.

Iroquois river (Madawaska).—At Theriault's Mills, on the Iroquois, a cribwork wharf, 110 feet long, 10 feet wide and 12 feet high, was built with an expenditure of \$199.77.

At Little Forks, Iroquois river, a cribwork dam, 35 feet long, 8 feet wide and 4 feet high, was built at a point three miles from the mouth of the forks, from the head of an island to the mainland, in order to make one channel. In a distance of six miles from the mouth of the forks up stream 53 rocks, equal to 97 cubic yards, were blasted and hauled ashore at an expenditure of \$100.

Little river, St. Francis (Madawaska).—Two sluices, one 130 feet long, 10 feet wide and 4 feet high; the other, 20 feet long, 14 feet wide and 4 feet high, were built at the falls, five miles from the mouth of Little river, with an expenditure of \$200.

The whole expenditure on the upper river amounted to \$4,849.88 for works, and \$329.10 for the pay and expenses of the foreman during the year 1905-6.

The total expenditure during the fiscal year 1905-6 was \$9,298.34.

SAND POINT (ST. JOHN).

On the 30th September, 1905, a contract was let for the excavation of a portion of Sand Point Slip, to a depth of 30 feet below low water, in order that the corporation might provide a new berth for the winter port traffic. Work was begun on the 9th of October.

On account of the presence of large boulders in the clay, difficulties were experienced by the contractor and many break-downs occurred in attempting to lift them,

6-7 EDWARD VII., A. 1907

owing to the tenacity of the material in which they were embedded, and also on account of their great weight.

By the end of the fiscal year, 200,095 cubic yards of material had been excavated. The expenditure during 1905-6 amounted to \$100,019.82.

SHIPPEGAN.

Shippegan Gully, Gloucester county, a passage between Shippegan island and the mainland, much used by fishing and other vessels in passing from Baie des Chaleurs to the Gulf of St. Lawrence, is situated 56 miles east of Bathurst, the shiretown of the county, and 3 miles from Shippegan, the terminus of the Caraquet Railway.

Works were commenced in 1875 for the purpose of improving the channel at the Gully: First, by constructing a breakwater on the east side and a dam to close what was known as the east gully; repairs and extensions of the dam and breakwater were in progress during 1880-1, 1883, 1883-4, 1886-7 and 1888-9. Secondly, in 1890-2 by building a breakwater off the west beach; repairs were continued during 1892-4. Thirdly, between 1898 and 1905, by constructing beach protection works on both sides of the harbour, closing all runnels which might enlarge or cause dangerous gaps in the beach, and building groynes to promote accumulation of sand and gravel for the protection of the work. During this period also general repairs were carried on and a new pile pier-head, 44 x 34 feet, was built as an extension to the eastern breakwater.

At the commencement of the works the depth at the entrance was only 3½ feet at low water. In 1898 it had increased to nearly 6½ feet, and by a survey made in 1903-4, it was shown that the concentration of the current in one channel by the construction of the breakwaters and other works had increased the depth to about 8 feet at low water, or 13·8 feet at high water of spring tides.

In 1904-5, a new pile block, 77 feet long on its centre line and 24 feet 4 inches in extreme width, was begun on the inside of the west breakwater, 86 feet from the outer end. This is intended to protect the breakwater from the ice of Shippegan harbour which strikes here with great force when carried by the ebb tide and strong winds; it will tend to deflect the current and straighten the channel which now makes a sharp bend just inside the entrance. By the end of the fiscal year the 66 main piles had been driven and walings, chocks and horizontal braces placed.

During the fiscal year 1905-6, the diagonal braces were placed, the outer side and the end were close piled with 10-inch by 10-inch hardwood, and the inner side with spruce piles, and the interior was filled with fascines, brush and stone. About 30 cubic yards of stone and a small part of the covering are still needed to complete the block.

Repairs were also begun on 86 feet of the outer end of the west breakwater, 9 pile bents were driven, 10 feet centre to centre, midway between the old bents; new walings, cross-ties and braces were placed and 38 hardwood close piles driven on the inside face.

The expenditure for the fiscal year 1905-6 was \$3,090.73.

SHIPPEGAN (RAILWAY WHARF).

Shippegan is a village and settlement of about 1,000 inhabitants, situated on the mainland just opposite Shippegan island. It is distant by rail 65 miles from Bathurst, 20 from Caraquet, 24 from Tracadie, and is 3 miles from Shippegan Gully.

Between the village and Shippegan island is a fine harbour about 7 miles long, north and south, and from two-thirds of a mile to five miles wide, opening into the Baie des Chaleurs on the north, through Shippegan channel, about two miles wide, and into the Gulf of St. Lawrence, on the south, through Shippegan Gully, 720 feet wide between breakwaters.

On December 29, 1905, the department entered into a contract with Mr. T. P. Charleson for the construction of a wharf at the terminus of the Caraquet Railway, which is central as regards population, near deep water, and a convenient point for passage to Shippegan and Miscou islands.

SESSIONAL PAPER No. 19

The wharf is to be 900 feet long, and will consist of a shore block, 245 x 25 feet, 13 blocks, 25 feet square, 14 spans of 20 feet, and a pier-head 50 feet x 30 feet.

Construction was begun on May 4, and by June 30, the outer 48 feet of the shore block had been built about 4 feet high. The cribs of blocks 3 to 12, inclusive, had been sunk in place and built to an average height of about 6 feet, and the cribs of block 13 and the pier-head were begun.

The expenditure for the fiscal year 1905-6 was \$3,890.97.

STONEHAVEN.

Stonehaven, Gloucester county, formerly Clifton, a station on the Caraquet Railway, is situated on the southern side of the Baie des Chaleurs, 18 miles east of Bathurst and 8 miles west of Grand Anse.

A breakwater at Stonehaven, originally 425 feet long and constructed by private persons, was acquired by the department in 1878, and during the same year was extended 325 feet, making a total length of 750 feet. The outer 220 feet is placed at an angle of 72 degrees with the inner portion, and the whole is constructed of round and square timber cribwork, filled with stone, and protected along the northern and eastern faces by a stone talus. The harbour affords shelter for fishing vessels and for schooners, engaged in the export of grindstones, &c., the depth at low water being 7 to 8 feet. Spring tides rise 7 feet.

Between 1886-8 and 1891-3, and annually since 1897, general repairs have been made to the work, large stones of from one-half to one cubic yard in bulk have also been placed along the northern and eastern faces. To prevent these being swept around the end of the work, a close-faced cribwork block, 70 x 40 feet, was built in the years 1901-2-3, at the westerly end of the 'L.'

During the fiscal year 1905-6, a new pier was begun, to protect the harbour from westerly storms. It starts 225 feet westerly of the present work, at the shore, and runs out towards the 70 x 40-foot block of the old breakwater. An entrance 120 feet wide is left between the two blocks.

The new pier consists of an approach 254 feet long and 15 feet wide on top, of round timber cribwork, sheathed on the inside with 3-inch hardwood plank; and a pier-head, with faces of square timber, 50 x 30 feet.

The timber work was completed during the fiscal year; a stone slope faced with close-laid granite blocks, which is to protect the outer side of the approach, was completed for a length of 90 feet.

Stone was also deposited outside the remainder of the approach, and an old cribwork, along the shore, was filled with freestone and earth, to afford an approach to the new work.

A shed was built for use as a blacksmith shop and for storing tools, and also a small scow.

Some 117 cubic yards of granite blocks were placed at the northeast corner of the original breakwater, to protect the end of the laid stone slope.

The expenditure for the fiscal year 1905-6 was \$9,000.46.

PROVINCE OF QUEBEC.

ANSE À BEAUFILS.

Anse à Beaufils, in the municipality of Cape Cove, county of Gaspé, is situated on the Gulf of St. Lawrence, 6 miles south of Percé.

In the years 1898 to 1901, protection works on each side of the channel leading to the inner basin were built, consisting of two training piers, each about 400 feet long.

During the fiscal year 1902-3, the pier on the eastern side having settled in the sand 6 to 8 feet deep, the sum of \$467.12 was expended in partly levelling the settled portion.

6-7 EDWARD VII., A. 1907

During the months of October and November of the fiscal year 1904-5, 50 feet of the east training pier having been broken by the sea, had to be sheathed with small logs, and part of the ballast carried away replaced. A crib of 85 x 22 x 12 feet has been built as an extension of the west training pier.

During the last fiscal year the outside cribs, both on the east and west side, were raised 2 and 3 feet, the corners strengthened and the inside face sheathed with spruce.

The whole of the west pier, besides the new crib, had to be emptied, the ballast floor removed and then refilled with fascines, brush and ballast, so as to keep the whole volume of water in the main channel.

Stone that had been thrown into the channel was removed, and a wall 5 feet high was built on top of the east pier, for a length of 150 feet, to prevent the sand from being carried into the channel by the sea.

Spring tides rise 5 feet, neap tides rise 3 feet.

The expenditure during 1905-6 amounted to \$1,317.35.

ANSE A BENJAMIN.

L'Anse à Benjamin, at St. Alphonse, near the wharf, is situated on the west side of Ha! Ha! bay, in the county of Chicoutimi.

The work commenced last year was continued; it consisted in the blasting and removal of boulders.

The expenditure during the fiscal year of 1905-6 amounted to \$1,020.

ANSE À GILES.

L'Anse à Giles is a post village in the county of L'Islet, on the south shore of the St. Lawrence, about forty-five miles below Quebec.

Spring tides rise 21 feet.

In the year 1904, the wharf at that place and the right of way from the public road were purchased for the sum of \$650. The wharf consisted in a head block, 50 by 36 feet, on a height of 16 feet, and six piers connected by platforms of 25 feet span.

During the fiscal year 1904-5, the following repairs were made to that wharf; two piers, 25 by 20 feet, were entirely renewed and the superstructure of the others rebuilt, the planking and all the stringers were replaced.

The expenditure amounted to \$987.94.

In the year 1905-6, the repairs were completed; all the piers were sheathed with spruce deals 3 inches thick; cap timbers in cedar, 10 inches square, were placed on both sides of the wharf, and twenty-seven 'toises' of stone ballast were added, where needed.

Expenditure for the year 1905-6 was \$947.08.

ANSE À LA GROSSE ROCHE.

L'Anse à la Grosse Roche, in the parish of Sacré Cœur, in Chicoutimi county, is situated on the north side of the River Saguenay, twelve miles from its mouth.

During the year 1903-4, a certain quantity of timber was bought in view of the construction of a wharf at this place.

Amount expended, \$599.50.

During the fiscal year 1904-5, a contract was awarded for the construction of the wharf, for the sum of \$9,000; work was commenced at once.

When completed, the wharf will be 265 feet long, and the depth of water, at the outer end, will be 16 feet, at low water spring tides. It will consist of three piers, placed 20 feet apart; the outer pier, built in the form of an 'L,' will be 105 feet long and 40 feet wide. The abutment will be 90 feet long and 20 feet wide.

The expenditure during 1904-5, was \$8,538.82.

During the fiscal year 1905-6, the work under contract was completed. The wharf is now 265 feet in length by a width of 20, 30 and 40, built of round logs, in three

SESSIONAL PAPER No. 19

piers, the outer pier in the shape of an 'L,' 105 feet in length and 40 feet in width, at outer end, where there is 16 feet of water, at low water spring tides.

An extension, 20 by 20 feet, was built; a freight shed was also constructed, and the approach built.

Spring tides rise 17 feet; neaps, 10.

Total amount of expenditure during the last fiscal year, \$6,817.35.

ANSE A L'ISLOT.

Anse a l'Islet is a small harbour 7 miles west of Newport, protected from the northerly and easterly winds by the main coast and from the southwest gales by a small island, being thus open only to southerly gales.

It was decided to build a landing pier running from the main shore towards the outside end of the island, in a southwesterly direction, answering as a landing pier and as a breakwater against southerly gales.

During the fiscal year, timber was bought for the proposed work, to the amount of \$1,549.32.

ANSE AU GRIFFON.

Anse au Griffon is 17 miles northwest of Gaspé cape.

The mouth of the river having been choked and closed up by a gravel bar thrown in by northeasterly gales, overflowed the flats and part of the village, causing a good deal of damage to properties and to the fishing industry. The new channel running easterly, inside of the gravel bar had to be closed by a training pier, 345 feet long, an average height of 11 feet and 22 feet wide, built of brush and stone backing.

The gravel bar being 10 to 12 feet high and 170 feet wide had to be cut through, for the continuation of the training pier and the opening of a new channel; a channel of 600 feet, giving 440 cubic yards of earth, had to be made at some distance above the work, so as to take the water from a small tributary into the main river, above the works under construction. Two hundred and sixty feet of the west or left hand side training pier has been built, 150 feet of sheathing remains to be done.

The expenditure during the last fiscal year is \$3,159.53.

ANSE AUX GASCONS.

The village of Anse aux Gascons, Bonaventure county, is situated on the north shore of the Baie des Chaleurs in the municipality of Port Daniel east, 7 miles from Port Daniel, 42 miles from Percé. It is one of the best fishing stations on the Baie des Chaleurs.

In 1897, a contract was entered into for the construction of a breakwater, in the sum of \$11,494; work was completed in 1899.

This structure is 486 feet long and 20 feet wide on top, built of close-face crib-work and sheathed.

During the fiscal year 1901, the sum of \$1,402.49 was expended in repairs, improvements and in the removing of dangerous boulders from the vicinity of the breakwater.

On April 27, 1904, a contract was entered into for the construction of an addition 210 feet long, 30 feet wide, built of close-faced cribwork, filled with stone and covered with 6-inch flooring. Contract price, \$15,495.

During the fiscal year 1904-5, the extension, on its entire length of 210 feet, was built to about 1 foot from high water level.

The expenditure during 1904-5 amounted to \$11,612.50.

During the last fiscal year, the work under contract was completed; a freight-shed was constructed and two new mooring posts put on wharf.

The total expenditure during 1905-6 amounted to \$2,696.71.

6-7 EDWARD VII., A. 1907

ANSE ST. JEAN.

Anse St. Jean is situated on the north shore of River Saguenay, twenty-five miles above its mouth.

The public landing was commenced by the local government in 1876 and continued by the federal government in the years 1879-80 and 1880-1.

The amount expended by the local government and the municipality is \$1,700.

During the year 1881-2 the upper part of the pier was completed at the cost of \$1,091.72. The pier was 356 feet in length, 26 in width up to the head, which is 50 by 40, and 30 feet high. At low water spring tides there is a depth of $7\frac{1}{2}$ feet at the outer end of the pier.

In 1884-5 the pier was repaired at a cost of \$94.25.

During the year 1886-7 the sum of \$865.28 was expended on the construction of a movable slip and of an open shed, 40 x 28 feet, and for renewing part of the flooring.

In 1890-1 a portion of the wharf, which had settled in the spring of 1889, was raised from $2\frac{1}{2}$ to 3 feet over a length of 135 feet; the flooring was renewed, a quantity of stone was placed in the eastern portion of the wharf and the shed was repaired.

Expenditure, \$999.42.

During the years 1892 to 1897, repairs were made, the flooring completed and the eastern face of the cribwork sheathed at the cost of \$1,963.75.

During the year 1898-9 a landing slip was built on the eastern side of the pier; it is 75 feet long at the base, 25 feet on the top and 14 wide, filled with stone ballast. The planking of the pier was renewed on a length of 200 feet. Total expenditure, \$1,000.27.

In the year 1899-1900, 50 feet of the outer end of the wharf was sheathed, 300 feet of flooring was completed with 3-inch spruce deals and the shed was painted. Expenditure, \$1,010.15.

During the year 1902-3 the work done consisted of general repairs to the flooring, a new landing slip and the sheeting of the shed. Amount of expenditure, \$747.91.

During the year 1903-4 a pier, 24 feet in length by 50 feet in width and 34 feet in height, was sunk in 13 feet of water at low spring tides. This pier is built of round log open-face cribwork, fendered every 8 feet, and sheathed on the two outside corners with 8-inch timber. Expenditure, \$3,059.84.

During the fiscal year 1904-05, the pier commenced the previous year was completed; the work consisted in laying the stringers, planking and sheathing. Repairs were also made to the wharf.

The expenditure during 1904-5 was \$1,191.99.

During the fiscal year of 1905-6 the outside pier, which had settled, was levelled and a combined shed and waiting-room built.

Expenditure during the year, \$1,005.75.

ASHUAPMOUCHOUAN RIVER.

Ashuapmouchouan river, in the county of Chicoutimi, is one of the tributaries of Lake St. John and is navigable up to St. Félicien; a boat runs from Roberval to St. Félicien.

In view of the increasing depth of the channel at extreme low water, two dykes were commenced, one at St. Prime and the other at St. Félicien.

At St. Prime the dyke is 1,400 feet long by 12 feet wide, with an average height of 8 feet.

At St. Félicien, 1,600 feet long by 12 feet wide, an average height of 9 feet.

These dams are built of brush and stone.

Total expenditure during the fiscal year of 1905-06, \$4,311.26.

SESSIONAL PAPER No. 19

BAIE DES ROCHES.

Baie des Roches is a small village in the county of Charlevoix, situated on the north shore of the River St. Lawrence, 120 miles below Quebec.

The small wharf commenced during 1904-5 and which was left half completed, was finished during the last fiscal year at a cost of \$499.68.

This construction is a small crib, 30 feet wide by 40 feet long, built inside the bay, and is used by sailing vessels. The wharf is dry at low tide.

BAIE ST. PAUL.

Baie St. Paul, a village in the county of Charlevoix, has a population of 1,500.

It is situated on the north shore of the River St. Lawrence, 60 miles below Quebec. It is built on both sides of the Rivière du Gouffre, which is a tributary of the River St. Lawrence, and empties into a large bay three miles wide, which is dry at low tide.

During the last fiscal year the flooring of the wharf at Cap au Corbeau, was repaired in different places. Two face timbers of the northeast slip were replaced, the corner fenders were renewed, also some of the hardwood sheathing that had been broken and taken away by the ice.

The expenditure for the fiscal year 1905-6 amounts to \$457.95.

BARACHOIS DE MALBAIE.

Barachois de Malbaie is a large parish and municipality situated at the head of Malbaie, some 12 miles east of the county town, Percé.

Barachois, on account of the large area of rich farming lands situated along the four rivers that form the barachois, of the important lumber firms that have built their mills along the barachois, and of its first-class fishing harbour, now that the government has begun the construction of a training pier to improve the entrance, may be considered the most promising centre in Gaspé peninsula. Until the government commenced the training pier now under construction, the fishing boats could not safely enter or go out of the harbour at falling tide and at low tide, on account of shifting sand bars. They had to remain outside and wait for the rising tide to come in.

During the fiscal year 1904-5, a crib, 100 x 22 x 18 feet was partly built and placed into position, at 590 feet from extreme high water mark; the approach thereto, from said high water mark, was built of fascine mattresses and the brush and stone filling commenced.

During the last fiscal year, the 100-foot crib was completed, the roadway filled, with the exception of an average of five feet, and a new crib of 120 feet long was built and secured into position.

The expenditure was \$4,508.19.

BASSIN.

The Bassin is a large parish at the centre and west end of Amherst island. The population is composed of Acadian fishermen, engaged mostly in codfish fishing.

On the south shore of Amherst island, opposite the said fishing establishment, there is no shelter whatever.

The construction of a small breakwater was decided upon.

A crib 66 feet long and 25 feet wide was built to a height of 13 feet, in 1904. The crib was completed last fall and another crib of the same size was built, placed and secured into position.

The expenditure during the last fiscal year was \$5,484.91.

Spring tides rise 4 feet, neaps, 2 feet.

6-7 EDWARD VII., A. 1907

BELOEIL.

Beloeil is an incorporated village in Verchères county, on the north side of the Richelieu river, and a station on the Grand Trunk Railway, 21 miles southeast of Montreal.

The Richelieu river leaves Lake Champlain at its northern extremity, and, after a course of 80 miles, enters the St. Lawrence at Sorel. It is broader and more rapid in the former than the latter part of its course, and at its centre it expands into the basin of Chambly. The Richelieu forms the most important medium of traffic between the St. Lawrence and the Hudson river.

South of the Grand Trunk Railway bridge, which crosses the river at Beloeil, the government built a number of piers and booms on both sides of the channel, to facilitate the passage of steamers and barges coming down the rapid current of the river and going through the narrow passage of the draw-bridge. There were eight piers, four on each side of the channel, distant from 80 to 100 feet from one another. From 1885 until 1888, some slight repairs were made to the booms at a cost of \$353.43. In 1890-1, three of the piers were rebuilt from the water line and some slight repairs were made to the booms, at a cost of \$1,500.35. In 1891-2 two other piers were rebuilt from the water line, at a cost of \$1,193.38. In 1895-6 some slight repairs were made to the booms, at a cost of \$144.79.

In 1896-97 it was found that the guide piers on the west side of the river were in such bad condition that they could not be properly repaired, and an entirely new line of guide works was adopted. It was decided to build a solid cribwork wall from the Grand Trunk Railway pile abutment upward, following the line of a 15° curve (about the natural curve of the shore), for a distance of 337 feet, to remove the four old piers and booms, and to dredge a wider channel for the free passage of boats.

The work, carried out by day labour, was commenced during that fiscal year and completed in 1899-1900, at a cost of \$17,444.67, including the dredging.

In 1903-04, the top of the four guard piers, on the east side of the river, were renewed to a height of 4 to 6 feet, and sheathed with hemlock 6 inches thick. Cost, \$1,673.34, with repairs not completed. These were continued in October, 1904, and completed at the end of November of the same year. They consisted chiefly in the replacing of three to five tiers of the top timbers of the four piers, the inserting of screw-bolted vertical posts at all corners, the sheathing of the two up-stream faces of each pier and icebreaker with a 6-inch and 8-inch timber, respectively, and the renewing of the two top tiers of long pier with 12 x 12-inch timber. Cost, \$676.68.

In July last the booms on the eastern side of channel were completely renewed at a cost of \$607.24. On the western side of channel, the wooden flooring of guide piers was removed and replaced with earth and sand. Further minor renewals to the boom below the bridge were also made. All these repairs, done by day labour, were completed at the end of October, at a total cost of \$1,173.19.

BERTHIER (EN BAS).

The village of Berthier, in the county of Montmagny, is situated on the south shore of the St. Lawrence, twenty-nine miles below Quebec.

During the last fiscal year, the sum of \$39.36 was expended in placing three snubbing posts on the wharf.

BIC.

Bic, on the south shore of the St. Lawrence, in the county of Rimouski, about 170 miles below Quebec, is a favourite summer resort.

Its harbour affords the best natural shelter for vessels of moderate draught.

Spring tides rise 16 feet, neap tides, 8½ feet.

In order to provide more facilities for landing and also to accommodate the traffic with the north shore, which is growing more extensive every year, it was decided to build a wharf, where vessels could land at all stages of the tides.

SESSIONAL PAPER No. 19

The work will consist of an approach, 500 feet long, from Pointe à Coté to Ile au Massacre, and following the northeast shore of that island a distance of 450 feet, and an outside section, 300 feet in length, giving a depth of water of 10 feet, at low water spring tides.

The construction began in the month of May, and at the close of the fiscal year nearly half of the approach, between the shore and Ile au Massacre, was built. The work is open faced, 21 feet wide with a mean height of 13 feet.

A considerable quantity of timber owned by the department at Bic was used in the work.

The expenditure for the fiscal year 1905-6, was \$4,490.23.

BROMPTONVILLE.

Bromptonville is a post village in Richmond county, Quebec, on River St. Francis, with a station on the Grand Trunk Railway, six miles from Sherbrooke.

A cribwork protection wall was built last year to protect, from the bridge to the river bank, the earth roadway which during the spring freshets is broken by ice, undermined by the water and carried away.

The work consists in two open-faced crib works each 100 feet long, 10 feet wide and standing in an average of 10 feet of water, fully ballasted with stone and sheathed with 4-inch planks. The construction was done by day labour and completed in the middle of November last at a cost of \$1,970.59.

During October, November and December, 1905, an expenditure of \$501.17 was incurred in further strengthening, by the addition of stone and earth, the protection works built the year previous.

CANNES DE ROCHES.

Cannes de Roches is a small fishing cove situated at the foot of the Percé Mountains, the only harbour for the fishermen from the mountains and from the settlement of Corner of the Beach, on the west side of Malbaie bay.

During the latter part of the fiscal year 1904-5, a sum of \$999.66 was spent towards making preparations and buying the material to build a small breakwater, to protect the cove from the easterly winds.

During the last fiscal year, a crib of eighty feet was sunk into position, built up to coping and extended 50 feet towards high water mark, giving a total length of 130 feet.

The expenditure during the last fiscal year was \$1,368.28.

CAPLIN.

River Caplin is situated in the county of Bonaventure, in the Baie des Chaleurs. During the fiscal year, two training piers were built, one on each side of the mouth of the river, so as to give shelter to the fishing fleet.

The hill, in the approach to the wharf (Robichaud's) was also lowered.

Total expenditure during 1905-6, \$999.81.

CHAMBORD.

Chambord, in the county of Chicoutimi, is situated on the southeast side of Lake St. John, 12 miles east side of Roberval.

Chambord is the junction for the Quebec & Lake St. John Railway of the Roberval and Chicoutimi branches.

It is an important village of Lake St. John, and contains one Catholic church, post office, several stores, telegraph office, several cheese factories and a saw mill.

During the year 1903-4, a certain quantity of timber was purchased in view of the construction of a wharf at that place.

6-7 EDWARD VII., A. 1907

Amount expended, \$1,304.92.

During the year 1904-5, a contract was awarded for the construction of a wharf, for the sum of \$9,350.

The work done during the year consisted of seven piers of 25 feet x 20 feet, with a head block of 30 feet x 50 feet, and an abutment of 40 x 20 feet. The whole is completed.

The depth of water at outer end is 7 feet; the water rises in spring 14 feet.

Amount expended, \$8,000.

During the fiscal year 1905-6, an approach and a freight shed were built.

Amount expended during the year, \$1,782.39.

CHAMPLAIN.

Champlain, a post village in Champlain county, situated on the north shore of the River St. Lawrence and on the Grand Trunk Railway, fifteen miles east of Three Rivers.

In May 1904, the old wharf of Mr. H. Arcand, with a piece of land of about $\frac{1}{2}$ an acre in area, on the shore of the river, and a right of way from the public road to the wharf, was purchased for the sum of \$1,000. On June 30 materials had been procured to the amount of \$4,628.07.

During the fiscal year 1904-5, the wooden crib substructure of a length of 110 feet and a width of 30 feet was built to a height of 2 feet above extreme low water level, sunk in front of the old Arcand wharf and fully ballasted with stone.

The superstructure of the same dimensions as crib at bottom, but 98 $\frac{1}{2}$ feet by 30 feet at top on account of icebreaker and 9 feet high, is of reinforced concrete mixed 1:2:4 and composed of 12 by 12-inch members with two $\frac{1}{4}$ -inch and two $\frac{3}{4}$ -inch iron bars inserted three inches from outside and inside faces respectively. These members are held together by $\frac{1}{4}$ -inch iron bars 10 $\frac{1}{2}$ feet long and laid vertically. A slip 9 feet wide, 11 feet long and starting 5 feet above low water was made in the middle of the face. The ice-breaker resting on stone foundation and inclined 1 $\frac{1}{2}$ in 1, is mass concrete mixed 1:3:5. The filling of the whole head block, up to 1 foot below cap pieces, is stone and sand. Tamarack fenders, all along the face complete the structure.

During the autumn and spring 1904-5, 165 concrete members out of the 230 needed, of different forms and lengths, varying from 2 feet to 22 $\frac{1}{2}$ feet, and representing a total lineal length of 1,839 feet out of the 3,027 feet required, were moulded, but owing to prevailing high water, these could not then be put in place.

The stone approach of a length of 150 feet, a width of 21 feet at top with slopes of 1 $\frac{1}{2}$ in 1, covered with an 8-inch coat of concrete mixed 1:3:5: on the upstream side, and 5 in 8 on the other side, was about $\frac{3}{4}$ completed. The work carried out by day labour, cost to end of June 1905, \$8,168.62.

In July, 1905, the remaining 65 concrete members, representing a lineal length of nearly 1,200 feet, were moulded.

In August the whole superstructure was assembled; it was completed at the end of October, at a cost, during the fiscal year, of \$3,752.05.

CHATEAU-RICHER.

Château-Richer is a village situated on the north shore of the River St. Lawrence, fifteen miles below Quebec.

The wharf commenced in 1904-5 was completed during the last fiscal year. It consists of a timber crib filled with stone ballast and measured 100 feet in length, 45 feet in width and 20 feet in height.

The expenditure for the fiscal year 1905-6 amounts to \$4,514.86.

SESSIONAL PAPER No. 19

CHICOUTIMI.

The town of Chicoutimi, in the county of the same name, is situated on the south shore of Saguenay river, seventy-one miles above Tadousac and at the head of navigation. The Richelieu and Ontario Navigation Company's boats call two to six times a week at the Chicoutimi pier during the season of navigation with passengers, freight and mail.

At the mouth of the river Chicoutimi, about one mile from the government wharf, there is an extensive lumbering establishment belonging to the Messrs. Price Bros. & Co., who export large quantities of sawed lumber, laths, shingles, &c., to Europe and elsewhere, in ocean vessels and large schooners which ascend the Saguenay to the town.

There is also the Chicoutimi Pulp Company, who has two pulp mills of a capacity of 78,000 tons a year; the Chicoutimi Pulp Company loads every year an average of twenty steamers.

Construction.—The landing pier was commenced in the year 1873 by the St. Lawrence Tow Boat Company, and completed by the Dominion government, to whom it was handed over in 1874, at a cost of \$14,193.40. From 1874 to 1882, inclusively, it was extended and improved at a total cost of \$2,823.73. The pier was then 282 feet long, and consisted of an approach 248 feet long and 30 feet wide, and a head block, 34 feet long and 127 feet wide, forming two wings, respectively, 70 feet and 27 feet wide. On the upper or 70 feet wing was a combined waiting-room and office, 20 feet square.

The depth of water at the end of the pier, which was originally 10 feet at low water spring tides, was then reduced to 7 feet by the accumulation of slabs and sawdust from the mills at the mouth of the Chicoutimi river.

In 1883 the shore end portion of the approach on a length of 38 feet was embedded in an embankment upon which the station and shed of the Chicoutimi branch of the Lake St. John Railway are now erected.

The length of the approach was thereby reduced to 210 feet. In 1884 the approach was widened 70 feet by filling in with slabs the whole space, 210 feet in length between the upper or 70 foot wing and the shore, and a storehouse, 40 feet long and 24 feet wide, was erected on this extension at a total cost of \$2,145.84. The filling was not, however, carried up to the level of the top of the pier until 1885, when the extension was floored in a manner similar to the rest of the work. A separate waiting room was also erected on the lower or 27-foot wing. The amount expended was \$2,042.11.

In 1890, a cribwork retaining wall, 14 feet wide, was commenced along the slab filling built in 1884, and the flooring was repaired, where required, at a total cost of \$1,005.81.

In 1891, the cribwork retaining wall was completed; a shed, 28 x 29 feet, built at the southern end of the pier, and the flooring repaired at various places at a total cost of \$1,802.70.

In 1897, the pier was again widened by the addition of cribwork, 30 feet wide along its lower eastern face, from the lower or 27-foot wing to shore, a distance of 210 feet. The cribwork was fully ballasted and floored with 3-inch tamarack plank, and 25 fenders were placed along its face. The pier was also sheathed for a length of 50 feet, along its northern face, in order to complete the sheathing all around the work. The expenditure was \$4,992.96.

As then completed the pier was 245 feet long and 130 feet wide. It was 29 feet high above the bottom of the river at its outer end, which stands in about 8 feet of water at low water spring tides.

Repairs—In 1883 and 1886, minor repairs were done to the flooring, &c., &c., at a cost of \$288.55.

In 1887, a slip was built at the outer end of the pier, the waiting-room was painted and general repairs performed at a cost of \$1,390.34.

In 1889, the flooring of the pier was almost entirely renewed and six fenders 14 inches square were placed along its outer face at a total cost of \$1,631.65.

6-7 EDWARD VII., A. 1907

In 1892 and 1893, the flooring of the pier was completely renewed on a length of 210 feet and a width of 110 feet, with red spruce plank 5 inches in thickness ; the east side of the structure was raised 18 inches; the waiting-room was painted both inside and outside, and two mooring posts were renewed. The expenditure during the two years amounted to \$3,024.04.

In 1894, a sum of \$1,999.60 was expended for the construction of a movable slip and the purchase of two crab-winches to raise it. During the years 1895-96, a portion of the outer face and the whole of the eastern face of the structure were resheathed with red spruce 6 inches in thickness ; a portion of the flooring, not completed in 1893, was laid.

Expenditure during the two years, \$3,991.88.

During the year 1898, a sum of \$239.79 was expended on minor repairs to the flooring, sheds and waiting-room.

During the year 1899, a freight shed, 60 by 30 feet, was constructed on the south side of the pier, for the storage of butter and cheese. Part of the top planking was renewed. The work was done by day labour at a cost of \$1,499.27.

During the year 1900, the pier was raised 3 to 5 feet over the whole surface, stone ballast was placed in the outer pier, which was all sheathed with tamarack and the covering was renewed with 3-inch plank.

Total expenditure, \$5,050.59.

During the year 1900-01, a new 3-inch tamarack floor was laid on a length of 310 feet and width of 45 feet.

The northern part of the wharf for a length of 145 feet was sheathed and sheds painted.

Expenditure, \$1,012.12.

During the year of 1901-02, the old building on the wharf was taken down and new ones erected; the new freight shed measured 60 by 30 feet, the passengers waiting room is 25 by 25 feet ; those two building are covered with galvanized iron and painted three coats inside and outside.

On the north side of the wharf, six fenders, 11 by 11 inches, were placed and five snubbing posts renewed. Total expenditure, \$1,513.34.

During the year 1903-04, the two outer corners of the wharf were renewed with hardwood, new fenders were put in at the head of the wharf, the flooring was repaired, and a portion of the flooring on the shore end which had to be renewed was replaced with gravel ; other minor repairs were also made. Amount expended, \$903.72.

During the fiscal year 1904-05, boulders on the east side of the wharf were blasted and removed. Amount expended, 365.64.

During the fiscal year 1905-06, certain repairs were done to the wharf and the freight shed at a cost of \$40.

Spring tides rise 17 feet ; neaps, 9 feet.

CLARKE CITY WHARF (SEVEN ISLANDS).

Clarke City is situated at the Bay of Seven Islands, Saguenay county, on the north shore of the Gulf of St. Lawrence, about 300 miles below Quebec.

The wharf is being built at a point called Pointe Noire, which is situated on the south shore of the bay; from there a railway line, 9 miles long, had been built to the falls of Ste. Marguerite river, where the North Shore Power Railway and Navigation Company are constructing a dam and erecting a pulp mill of proposed initial capacity of 250 shipping tons, and final capacity of 500 shipping tons of pulp per day. This pulp will be carried on the railway from the mill to the wharf and there transferred to steamers.

During the session of parliament of 1903, the sum of \$25,000 was voted towards the construction of a wharf at Pointe Noire, and during the session of 1904, a further sum of \$60,000 was voted to buy from the North Shore Power Railway and Navigation Company the part of the wharf built by them, for the sum of \$34,433.95, and a certain

SESSIONAL PAPER No. 19

quantity of timber and iron to the value of \$21,485.34, and to complete the work already begun.

By Order in Council, March 1, 1904, the transfer by the company was accepted, and an agreement entered into with the company for the performance of the balance of the work required.

The work already done in 1903 by the North Shore Power Railway and Navigation Company, and as bought by the department, consisted of a stone approach, 575 feet long, and one crib, 200 x 30, sunk and built to ordinary low tide level.

Work was resumed on May 21, 1904, and continued till October 27, 1904, when two cribs, 200 feet long by 30 feet wide, respectively, had been sunk in place, the superstructure of these two cribs and of the other one sunk the year before, was built to 2 feet below the required elevation, and the cribs were partly filled with ballast.

Spring tides rise 12 feet; neaps 5 feet.

Total expenditure during fiscal year 1904-5, \$49,881.92.

During the winter, 1904-5, the second and third cribs suffered damages, and to save the cribs, in 1905-6, certain work was performed to the amount of \$37.50.

CROSS POINT.

Cross Point, a village of Bonaventure county, is beautifully situated at the head of the Baie des Chaleurs, on the north shore of the Restigouche river, opposite Campbellton, N.B. The station of Cross Point, on the Atlantic and Lake Superior Railway, is about two miles from the village. There is a ferry boat running from Cross Point to Campbellton.

In March, 1903, a contract was entered into for the construction of a wharf at this place; the work was completed during the fiscal year 1903-4.

The structure is 455 feet long, 20 feet wide, except the outer end, which is 35 feet wide, where the landing slip is built. It consists of a stone approach 60 feet long and 20 feet wide, a cribwork abutment, 20 by 20 feet; two cribwork piers, 20 by 20 feet, placed at intervals of 20 feet; and one outer block, 275 feet long. The spaces between the abutment, the piers and the outer block are spanned with stringers. The whole wooden structure is covered with planks, and built of close-faced cribwork, ballasted with stone.

This wharf is intended to be approached at high tides only, during low water spring tides its outer end is left dry.

During the last fiscal year, a few piles were placed at the head of the wharf, for the security of the ferry boat; a large quantity of timber was also purchased to be used in the construction of the proposed extension.

Total expenditure during 1905-6, \$3,020.15.

DESCHAMBAULT.

Deschambault, county of Portneuf, is a flourishing village on the north shore of the St. Lawrence, and on the Canadian Pacific Railway, forty-one miles above Quebec. A steamer plies semi-weekly to and from Quebec.

In April, 1904, the department purchased a wharf for the sum of \$500 from La Compagnie des Bateaux à Vapeur de Deschambault et Lotbinière.

During the last fiscal year, a channel approach to the wharf was cleared, some 7,000 feet long by 300 feet wide, boulders, reefs, &c., were removed by blasting. The work had to be done at low tides, when the 'batture' was left dry.

An expenditure of \$333.60 was also incurred for taking care of timber, purchased in view of the construction of a new wharf.

On December 16, 1904, a contract was entered into with Mr. F. Bernier for the construction of landing pier at this place. Contract price, \$15,840.

The new wharf will be 247 feet long, and will consist of an outer crib, 120 feet long and 48 feet wide on top, built of close-faced cribwork; a middle section 80 feet long and 26½ feet wide, built of open-faced cribwork; and the shore section, 64 feet long

6-7 EDWARD VII., A. 1907

and 26½ feet wide, built of open-faced cribwork, with a batter of 1 in 1, for a height of 5½ feet from top, for the full length of the wharf, on the western face.

During the fiscal year 1904-5, the work had progressed very favourably.

Total expenditure during 1904-5, \$9,828.76.

During the last fiscal year, the wharf was completed and a waiting room, 15 feet by 26 feet, built thereon. Work on the roadway leading to the wharf was commenced in the beginning of June, and at the end of the fiscal year was not yet completed.

Total expenditure during 1905-6, \$10,022.31.

DESJARDINS.

During its session of 1904, Parliament granted the sum of \$11,000 towards the construction of a wharf at Desjardins' village, Allumette Island, on the River Ottawa, to accommodate the heavy traffic to and from Pembroke on the opposite shore.

On June 8, 1904, a contract was let to Mr. Thos. Moran for the wharf, which consists of an open-face cribwork landing pier 120 feet long and 20 feet wide, built in 6½ feet of water at E.L.W.L. And an approach 543 feet long and 16 feet wide at the top, built partly of open-face cribwork piers united by platforms, and stone rip-rap. The flooring is 8 feet above E.L.W.L. Work began in August, 1904, and was completed in June, 1905.

Cost of construction amounted to \$10,957.42. (For further details see report of 1904-5.)

At the last session of parliament, the sum of \$1,000 was appropriated for a gas pipe handrailing (1,076 l. foot) required on the approach. The handrailing was erected in October and November, 1905, at a cost of \$747.60; and painted in May, 1906, at a cost of \$36.60.

Expenditure during the fiscal year 1904-5,

Total expenditure to date, \$11,741.62.

D'ISRAELI.

D'Israeli is a post settlement in Wolfe county, Que., at the head of Lake Aylmer, and a station on the Quebec Central Railway, some 52 miles northeast of Sherbrooke.

The construction of the wharf at that place was begun by day labour at the end of September, 1904. The work consists of a close-faced 12 x 12 timber crib-head block, 50 feet by 36 feet and 17 feet high, standing fully ballasted with stone in 12 feet of water at mean level. A 30 foot span, composed of red pine beams every 3 feet supporting 3-inch pipe flooring, connects head block with crib abutment, terminating stone approach 200 feet long, 18 feet wide at top, with sides inclined 1 in 1½. A double 1½-inch iron pipe railing with 6-inch round cedar posts every 10 feet completes the whole structure.

At the end of the fiscal year 1904-5, the stone approach had been three-quarters completed and the crib-head block about half so, at a cost of \$4,990.62.

During 1905-6 the head block was completed. Work was suspended in October. The crib abutment has still to be raised 4 feet and the stone approach 1 to 3 feet. The guard railing and span will be completed next year.

Expenditure during the last fiscal year amounted to \$1,514.19.

ENGLISH RIVER.

St. Jean Chrysostôme is a post village in Chateauguay county, on the Grand Trunk Railway, four and a half miles from Aubrey station, and nine miles from Howick, where the English river flows into the Chateauguay. Population of parish, 2,207

Every spring during the freshets, the English and the Black rivers overflow and cause considerable damages to the village and parish of St. Jean Chrysostôme, an area of over 2,600 acres of good land being held for several days under from three to five feet of water. In order to prevent, or at least, considerably minimize these

SESSIONAL PAPER No. 19

disastrous floods, it was decided to deepen the bed of the English river from its confluence with the Black river, opposite the village of St. Chrysostôme, a distance of 500 feet down stream by a width of 60 feet. In this area, the bed of the river is solid rock, some 4 feet higher than the normal bottom, thus acting as a dam which causes the water to overflow upon the surrounding low lands.

Work was commenced in the autumn of 1903 and pursued since. During 1903-4, some 1,000 cubic yards of solid rock were blasted and removed at a cost of \$2,875.69.

In 1904-5, about 1,200 cubic yards of solid rock were blasted and removed at a cost of \$4,823.55.

During 1905-6, the blasting and removal of solid rock, some 300 cubic yards, was completed. Hard pan, boulders, gravel and clay representing some 2,500 cubic yards ploughed, scraped and removed at a cost of \$2,983.90. All the above work was done on a dry bottom, thus necessitating the temporary damming of both English and Black rivers.

The cleaning of the river of boulders for a length of one and a half miles still remains to be done.

ESCOUMAINS.

Les Escoumains, in the County of Saguenay, is situated on the north shore of the River St. Lawrence, twenty-one miles below Tadousac. A very important saw-mill, the property of the Saguenay Lumber Company, is located here, there is also a Roman Catholic church, telegraph and post office and several stores.

The harbour of Les Escoumains was obstructed by boulders.

During the year 1902-3, the sum of \$592.29 was expended in removing boulders.

During the year 1903-4, the blasting of the boulders, at the entrance to harbour, was continued. Amount expended, \$198.25.

On May 7, 1904, a contract was entered into with Bernier and Beaulieu for the construction of a wharf.

Work was commenced on July 25, 1904, and suspended for winter on November 1; the work done consisted in the sinking of two cribs, 110 feet and 87 feet in length, respectively, in the building of an approach, 153 feet in length, forming a total length of 350 feet with a width of 25 feet and a height of 21 feet, at the outer end.

Spring tides rise 15 feet; neaps, 9 feet.

The amount expended during 1904-5 was \$8,420.

During the fiscal year 1905-6, the work under contract was completed. It consisted of a wharf, 350 feet long, by 25 feet wide, having 30 feet in height and 8 feet of water at outer end.

The work is of round logs open face cribwork, with stringers 12 inches by 12 inches and a planking of 3 inches. The wharf is sheathed with 4-inch planking, fenders 8 inches by 10 inches are placed at every 8 feet, the whole is fully ballasted with stone.

The blasting of boulders, at the entrance to harbour, was also continued.

The expenditure during the fiscal year amounted to \$5,941.72.

FABRE.

Fabre a post village eleven miles south of Ville Marie, on the Quebec shore of Lake Temiskaming, is the centre of a good farming district of Pontiac county.

In 1903, parliament appropriated \$2,000 towards the construction of a wharf in Lavallée bay. On account of difficulties experienced in the location of said wharf, no work was done during the fiscal year 1903-4.

The sum of \$2,000 was revoted in 1904. On June 30, 1905, practically all required materials had been procured at a cost of \$1,329.03.

The projected wharf to be of pile work, having a frontage of 40 feet and extending a distance of 240 feet from 7 feet depth contour to shore, followed by a stone approach 16 feet wide at the top, two hundred odd feet long to the roadway. Elevation of floor 12 feet above O.L.W.L.

6-7 EDWARD VII., A. 1907

On account of extreme low water in 1904, it was deemed advisable to place the front of the wharf 32 feet farther out, and have the floor 13 feet above O.L.W.L. Parliament again granted the sum of \$2,000 at its last session. Construction was started in February 1906, and the wharf, although not completed, was in regular use by the end of the fiscal year.

Total expenditure to date, \$3,374.72.

Expenditure to June 30, 1906, \$2,045.69.

FATHER POINT.

Father Point, in the county of Rimouski, is on the south shore of the St. Lawrence, six miles below the town of Rimouski. Most of the ocean liners call there to land or take in their pilots. The point is one of the few places on the south shore of the St. Lawrence where deep water can be found at a relatively short distance from land.

A self-registering tidal gauge was established here some years ago by the Department of Marine and Fisheries. There are also a powerful compressed air fog-horn and an acetylene gas lighthouse.

It was found desirable a few years ago that a deep water wharf be constructed at Father Point; tenders were called for, and on November 8, 1901, a contract was awarded to Messrs. Heney & Smith for a section of the structure, 600 feet long.

The work was carried out during the years 1902 and 1903 and completed by the beginning of July, 1904, the amount of contract being \$57,821. The section is a very substantially built cribwork, thoroughly filled with stone; it is 600 feet in length and 40 feet wide at the bottom; the sides are vertical up to the level of 5 feet below low water line; from this point, the east side is built with a batter of 1 in 4, and the west side is vertical, the width at top being 32 feet.

Both faces are sheathed with hardwood 10 inches thick. In May, 1904, a new contract was entered into with the same parties for the construction of an additional length of 200 feet. The work was completed on the 8th of November, 1905; the kind of construction being the same as before. The outer end of the wharf stands in 18 feet of water at extreme low spring tides.

The expenditure for the year 1905-06 was \$30,166.52.

GATINEAU POINT.

Gatineau Point village, in the county of Wright, is at the intersection of the Gatineau and Ottawa rivers, 2 miles from Ottawa.

During the fiscal year 1885-86, a cribwork wharf, having a frontage of 107 feet and a depth of 8 feet at lowest water, with approaches providing for the different stages of water level, was built at this place; also a pile-work retaining wall, 230 feet long, to protect the bank and roadway on the up-stream side of the wharf. (For further information, see annual report, 1904-5.)

At its last session, Parliament granted the sum of \$1,100 towards repairs to the wharf and protection wall. This sum being insufficient, a further amount of \$7,000 was appropriated for the reconstruction of the retaining wall, by making a permanent construction of concrete cribwork, 17½ feet in height, 231 feet in length.

On account of the urgency of this work and because of the departure from ordinary construction, it was deemed expedient to commence operations without delay, and to do the work by day labour.

Accordingly, preliminary work of fitting up a plant was started late in August. Piling, excavation and foundation work proceeded in September and October. Moulding of re-inforced concrete members (5,600 l. ft.) lasted through October-November, and the wall proper was erected in November-December.

The back-filling, however, could not be proceeded with on account of cold weather, and work was discontinued for the winter.

Expenditure during the fiscal year 1905-06, \$8,158.86.

SESSIONAL PAPER No. 19

GRAND ENTRÉE.

Grande Entrée is situated on the western side of Coffin island, in the Magdalen islands group.

During the last fiscal year the landing was repaired and the flooring was raised to proper level, as well as the freight shed.

The expenditure for 1905-06 was \$120.84.

GRANDES BERGERONNES.

Grandes Bergeronnes, Saguenay county, is on the north shore of the St. Lawrence, 18 miles below Tadoussac.

The entrance to the river Grandes Bergeronnes being obstructed by boulders, a channel of about 150 feet was cleared from the entrance to the village, a distance of one mile.

In the years of 1887, 1895, 1899, 1901 and 1902, a total sum of \$254.32 was expended.

During the year 1902-03, the work was continued by day labour. Amount expended, \$398.77.

During the year 1903-4, the work of clearing the channel was continued and a pier, 20 by 30 and 19 feet in height, was built. Amount expended for the construction of the pier was \$239.30.

During the fiscal year 1904-5, the landing pier was completed; another pier was built 20 by 30 feet with an approach of 30 by 40 feet, placed 25 feet from the outer block. The whole structure is completed, fendered, sheated and fully ballasted. The wharf is at present of the following dimensions, 85 feet in length by 20 and 60 feet in width, the outer block having 20 by 60 feet, the height is 19 feet at the outer end.

The boulders around the wharf were removed and the cleaning of the channel of Grandes Bergeronnes was continued.

Expenditure during 1904-05 was \$1,762.58.

During the fiscal year 1905-06, the sum of \$500 was expended to continue the cleaning of the channel.

Spring tides rise 16 feet; neaps, 9 feet.

GRINDSTONE.

Grindstone is a village on the south side of Grindstone Island, 4 miles east of Etang du Nord. The population is composed mostly of Scotch farmers and Acadian fishermen.

For years past most of the freight for the Magdalen Islands has been landed here, and the building of a landing pier was greatly needed.

In the fiscal year of 1901-2, a landing pier was begun; one hundred and fifteen feet of close-faced cribwork on an average width of 25 feet and of an average height of 15 feet was built. An approach of 605 feet, 25 to 50 feet wide, and of an average height of 9½ feet on the outer face, was built along the eastern side of Grindstone Cape.

The outside face of the approach, exposed to the heavy easterly gales from the Atlantic ocean, is protected by a sheathing of split spruce logs, held in place by two sets of walings, fastened by cross-ties and a double set of posts.

A mattress of brush was laid under the stone filling, taken from the cape.

During the fiscal year 1902-3, the pier was extended 255 feet, with an average width of 25½ feet and of an average height of 19 feet, to floor level. In the fiscal year 1903-4, the pier was extended 200 feet, with an average height of 22 feet and an average width of 28½.

Six feet of the superstructure of the last one hundred-foot crib was built up in July and August, 1904.

During the last fiscal year a crib 100 long, 30 feet wide, by 26 feet high, was built ashore, the ballast procured and all preparations made to get the crib into position.

Spring tides rise 4 feet; neap tides, 2 feet.

The amount paid for work and materials during the last fiscal year was \$1,752.99.

6-7 EDWARD VII., A. 1907

GRONDINES.

Grondines, a post village in the county of Portneuf, is situated on the north shore of the St. Lawrence, 48 miles above Quebec, on the line of the Canadian Pacific Railway.

Two lighthouses are located at this place. A steamboat from Quebec calls here twice a week. Population of village 440; population of parish, 1,500.

In February, 1904, the department acquired a water lot and wharf at this place.

It was intended to enlarge the present wharf, the work to be done by day labour, but later, the department decided to let the work by contract.

The total expenditure during 1903-4, including materials purchased, &c., amounted to \$4,395.80.

During the fiscal year 1904-5, a contract was entered into with Mr. Alphonse Lemay for the construction of the proposed enlargement; contract price, \$14,500.

Work has progressed very satisfactorily, and it is expected that it will be completed in October, 1905.

Total expenditure, \$7,500.57.

During the last fiscal year, the work under contract was completed and a waiting room, 26 x 15 feet, built at the northern end of the stone approach.

Total expenditure during 1905-6, \$9,531.84.

HUDSON.

Hudson is a post village in Vaudreuil county, Quebec, on the River Ottawa and on the Grand Trunk Railway, 9 miles from Vaudreuil and 35 miles from Montreal. It is a landing of the Ottawa steamers.

In October, 1901, the old wharf of Mr. John McNaughton was bought and transferred to the government for the sum of \$800; it was demolished to low water level and rebuilt with an extension at eastern end of 20 feet square.

The wharf is of close-faced cribwork and of a total length of 102 feet by a width of 20 feet. The approach is a stone embankment, 135 feet long, by a width of 20 feet for the first 93 feet from shore, and 42 feet for the remaining portion to head block; it is sloped 1 in 1 and guard-railed on both sides. A storehouse, 18 by 24 feet, with waiting-room, was erected at the western interesection of head block and approach.

The work of reconstruction was commenced in October, 1901, and completed in August, 1902.

During November, 1905, minor repairs were made, consisting chiefly in renewing the sheathing of the two front corners, and covering same with steel plates. Some planks of the flooring were also renewed, gravel spread on stone embankment and a small cattle yard fenced in.

The expenditure during the last fiscal year amounted to \$205.65.

ISLE PERROT, SOUTH.

Isle Perrot, about 7 miles long and 3 miles wide, is in the county of Vaudreuil, at the confluence of the St. Lawrence and Ottawa rivers, between Lakes St. Louis and of Two Mountains. Two bridges on the Grand Trunk Railway and Canadian Pacific Railway connect the island with Vaudreuil and Ste. Anne de Bellevue.

In 1886-7, a contract was entered into with Mr. D. O'Brien for the construction of a pier on the south shore of the island, about $1\frac{1}{2}$ miles below the parish church, consisting of a crib block 120 feet long, 30 feet wide, with return of 34 by 16 feet in rear of east end, and sunk in 8 feet of water at a distance of 581 feet from shore. It was completed in the year 1887-8 at a cost of \$5,264.26.

During 1888-89 and 1889-90, the approach was built at a cost of \$7,156.29. It consisted of 9 cribs 24 feet wide, 5 being 20 feet long and four 12 feet long, placed at inter-

SESSIONAL PAPER No. 19

vals of 22 to 25 feet and spanned by stringers and planking, and of a shore abutment, 182 feet long and 16 feet wide. A freight and shelter shed 16 by 20 feet, completed the structure.

In 1896-7, general repairs cost \$395.93.

In September, 1899, a number of planks on the approach were renewed at a cost of \$165.81.

During September and October, 1900, the sheathing of ice-breaker was renewed with 8-inch tamarack, as was two-thirds of the flooring and a number of hemlock pieces and stringers. The guard-railing was repaired and painted, and the stone embankment regravelled. Cost, \$876.04.

During June, 1904, minor repairs were made to the flooring and guard-railing at a cost of \$437.80.

In June, September, October, 1905, and spring, 1906, the flooring of the head block, and part of that of the approach was renewed with 3-inch pine planks, about $\frac{1}{2}$ of the stringers of approach were also replaced.

The expenditure during the last fiscal year amounted to \$1,051.27.

ISLE VERTE.

The village of Isle Verte, in the county of Temiscouata, is situated on the south shore of the St. Lawrence, 16 miles below Rivière du Loup, and 130 miles east of Quebec.

Spring tides rise 19 feet; neaps, 12 feet.

During the fiscal year ended June 30, 1906, the sum of \$497.86 was expended towards the removal of boulders and scattered rocks from the harbour of Isle Verte, in the vicinity of the wharf; most of the boulders had to be blasted and were taken away on scows.

LAC À BEAULIEU.

Lac à Beaulieu, in the municipality of Les Grandes Bergeronnes, is situated three miles north of the village.

The outlet of Lac à Beaulieu is obstructed by boulders and rock, which render the floating of logs very difficult.

During the year 1903-4, a certain quantity of boulders and a ledge rock were blasted.

Amount expended, \$297.76.

During the fiscal year 1904-5, the work of removing boulders was continued at the cost of \$200.36.

Total amount of expenditure to July 1, 1905, \$498.12.

During the fiscal year 1905-6, the enlarging of the outlet of Lac à Beaulieu was continued.

LACOLLE.

Lacolle is a post village in St. John county, on the Lacolle and Richelieu rivers and on the Grand Trunk Railway, 30 miles southeast of Montreal.

The wharf generally known as the Lacolle wharf is, however, situated on the western shore of Ash island dividing the Richelieu river opposite Lacolle. It is built near the eastern end of the Richelieu county highway bridge.

The structure was constructed before 1890, and is entirely on piles, 100 feet square, and standing 8 feet above low water.

In 1894-5, the eastern half, and in 1895-6, the western half of wharf was repaired. All the floor beams were replaced and a 3-inch hemlock flooring laid. Many of the piles along the western and eastern faces were renewed from 2 feet above low water. The storehouse was also repaired, including repainting. Expenditures, \$737.34 and \$726.36, respectively.

6-7 EDWARD VII., A. 1907

During October, November and December, 1905, extensive repairs were undertaken by day labour and completed December 8. They consisted chiefly in the scarfing above low water of 25 piles partly decayed, and the renewing of half the caps and all of the stringers and flooring. The latter was done with 3-inch pine planks. The wharf is now in fair condition.

The expenditure during the last fiscal year amounted to \$1,000.32.

LAKE MÉGANTIC.

Lake Mégantic, between Compton and Beauce counties, and 73 miles southeast of Sherbrooke has a length of 12 miles, a breadth of 2 to 4 miles with a coast line of over 36 miles. This lake and the rivers that empty into it form the head waters of River Chaudière.

Between 1882 and 1887 small wharfs were built in different localities around the lake: Woburn or Lourdes, Agnès, Ditchfield, Piopolis, Three Lakes or Flint, Victoria Bay or Marsboro and Lake Mégantic village.

During the spring of 1906, repairs were made at Woburn, Piopolis, Three Lakes and Victoria Bay, at a total cost of \$4,359.64.

Woburn.

Woburn is a small settlement in Beauce county, at the southeastern corner of Lake Mégantic. Population, 300. The wharf was built in 1883-4, about one mile west of the village in Compton county. It is 190 feet long, and originally cost \$1,194.71.

In 1889-90, minor repairs cost \$169.68. During the spring of 1890-1, the pier was slightly damaged by ice and repaired. Expenditure, \$500. In 1899-1900, a sum of \$758.84 was expended in raising the wharf 5 feet, necessitated by the rise in the lake level caused by the damming in 1895 for industrial purposes of the Chaudière river at its outlet from the lake. In 1900-1, an open shed, 20 x 30 feet, with small freight room, was built at the outer end of the wharf. Cost, \$204.98.

During May and June, 1906, the inner side of the head block was enlarged 10 x 20 feet, on both sides of approach; steel plates were placed at both outside corners, and general repairs made to stringers and flooring. Work done by day labour, at a cost of \$942.27.

Piopolis.

Piopolis is in Compton county, on the west shore of the lake, and about 11 miles south of Mégantic village, on the Canadian Pacific Railway. Population, about 1,000.

The wharf was built in 1882-3, at a cost of \$721.60. It is of solid cribwork, filled with stones and topped with gravel.

In 1887-8, minor repairs cost \$77. In 1897-8, the wharf was raised 5 feet and generally repaired. Expenditure, \$623.05.

During May and June, 1906, extensive repairs were undertaken. The head block was rebuilt from low water level and enlarged 20 x 20 feet, a small storehouse erected, and the approach raised 2 feet. Work done by day labour, at a cost of \$1,673.43.

Three Lakes.

Three Lakes, in Beauce county, is situated at the head of Lake Mégantic, almost opposite Woburn. It is a much frequented place by tourists and sportsmen.

The wharf was built in 1884-85, at a cost of \$1,712.41. In 1886-87, the structure was slightly damaged by ice, it was repaired at a cost of \$323.78. In 1889-90, minor repairs cost \$156.26. Part of the pier having been carried away by ice, leaving nothing but the remnants of six old cribs below low water line, its reconstruction was begun and completed during the autumn of 1901, at a cost of \$1,440.05. The spaces between the old cribs were filled in by new cribs 16 x 20 feet, and a new superstructure built up to 5 feet above low water level. The pier is 20 x 30 feet at the head, and

SESSIONAL PAPER No. 19

240 feet long; the approach is 16 feet wide. The top is finished with sand and gravel. During May and June, 1904, the whole wharf was raised 2 feet and fully ballasted. The roadway was partly raised and improved and a small waiting-room erected on the wharf. Cost, \$731.88. In 1905, minor repairs cost \$118.12.

During June, 1906, the head block was enlarged by the building of two small cribs, 10 x 20 feet, and the placing of same on both sides of approach, adjoining head block. Some sand filling was also made in the whole structure. Cost, \$502.80.

Victoria Bay.

Victoria Bay is situated in the township of North Marston, in the county of Compton, some 4 miles southwest of Mégantic village. The pier was built in 1885-6, at a cost of \$854.20, and repaired in 1889-90, at an expenditure of \$80.

In April, May and June, 1906, the whole wharf was rebuilt from one foot below low water level. It now consists of a close faced crib head block, 30 x 30 feet, and a stone approach, 150 feet long and 16 feet wide. A roof 30 x 20 feet covers the head block. Total expenditure during last fiscal year, \$1,241.14.

LAPRAIRIE..

Laprairie is the chief town of the county of the same name and is situated on the south shore of the River St. Lawrence, seven miles above Montreal. A stream ferry runs between Laprairie and Montreal, making several trips a day. The population is about 2,500.

In 1886, the government undertook to protect Laprairie from the disastrous effects of the spring floods and ice shoves of the St. Lawrence, by constructing ice breaking piers, a revetment wall of cribwork some 1,650 feet long and 20 feet wide, along the shore of the river in front of the town, and, at its upper limit, an earth embankment 1,600 feet long.

In 1886-7, two ice piers were built about 250 feet apart at the upper part of the town facing the St. Lawrence river, at a cost of \$6,736.19.

In 1887-8, an earth embankment was constructed inward from the shore from a length of 1,600 feet, at the western limit of the town. A cribwork retaining wall was also built for a length of 480 feet, half-way between the eastern ice-breaker and the Richelieu Company's wharf. This wall was 20 feet wide, 10 feet high from the water mark, and was filled principally with stone.

In 1888-9, another cribwork retaining wall 335 feet in length, from the Richelieu wharf westward was commenced and completed to a height of 16 feet above low water mark during the year 1889-90, at a cost of \$7,560.52. It was built of open cribwork, 20 feet in width, with a batter of 1 in 12 in the outer face.

In 1890-1, some general work was done in sheathing the walls previously built, at a cost of \$658.58. In 1891-2, the retaining wall of the lower end of the town, adjoining the Richelieu wharf, was extended a further 131 feet at a cost of \$2,495.10.

In 1892-3, a further extension to the wall, 420 feet long, was built to a height of 8 feet above low water mark, at a cost of \$2,589.51.

In 1893-4, the remaining portion of the wall built between the eastern icebreaker and the Richelieu wharf, 284 feet in length, was completed to a height of 10 feet, at a cost of \$2,387.39.

In 1895-6, the sum of \$2,015.51 was expended in constructing a stone protection work between the two icebreakers, the distance being 250 feet, and raising a portion of the retaining wall to an elevation of 16 feet above low water mark.

In 1896-7, 387 feet in length of cribwork wall was completed to a height of 12 feet above low water mark, at a cost of \$5,640.64. The whole of this work was built of round logs, filled with stone and sheathed with 3-inch pine planks.

During May and June, 1899, the earth embankment, at the southwest of the village, in connection with the protection wall, was raised from 1 to 2 feet to the level of the said protection wall, on a distance of 1,000 feet; the riprap from the icebreaker

6-7 EDWARD VII., A. 1907

to the embankment, which was badly damaged, was renewed and put in good condition. The work done by day labour cost \$1,659.86.

During 1901-2, the western icebreaker being found much decayed and dilapidated, was removed, and a new one of the same size substituted. Cost, \$1,057.02.

In 1902-3, the eastern icebreaker was likewise removed and a permanent concrete structure erected in its place, at a cost of \$3,653.49. It has a length of 40 feet by a width of 22 feet at the base, and a height of 25 feet. The side facing the St. Lawrence is sloped $1\frac{1}{2}$ in 1. Other repairs were made to the protection wall to the extent of \$1,345.59, making a total outlay for the year, \$4,997.08.

During July and August, 1903, further repairs to the protection wall were made by day labour at a cost of \$878.74. Two sections known as numbers 2 and 4, of this wall, being found too much decayed for ordinary repairs, it was decided to replace them by a substantial concrete wall.

To this effect, in November, 1903, after tenders had been called for, a contract was entered into with Messrs. Amiot & Lemay, of Montreal. The new walls were built in front of the old wooden ones, the space between the two being filled with stone, at a distance varying from nothing to 5 feet; they have a cross-section of 7 feet 8 inches at the bottom with the outside face inclined 1 in 12, and the back with recedes of 2 feet at a height of 4 feet and of 1 foot at a height of 9 feet, with further batter of 1 in 12 from a height of 15 feet to the top. The height of the walls was to be 18 feet according to specifications, but in order to add still better protection to the town, it was deemed advisable to modify this to $19\frac{1}{2}$ feet, thereby reducing width at top on account of the two batters, from 3 feet to 2 feet 9 inches. Two $1\frac{1}{2}$ -inch anchor bolts with 1 foot square and 1 inch thick iron plates connect, every 20 feet, the new wall with vertical post securely bolted inside the face of the old wall. Six-inch vitrified drain pipes inclined 1 in 12 from the lower recede were inserted every 50 feet.

The outside face of the wall was strengthened on account of added height with $1\frac{1}{2}$ -inch iron bars 16 feet long, placed every 5 feet. Section No. 2 has a face length of 413 feet with angle wings of 26 and 16 feet, and section No. 4, a length of 334 feet with returns of 19 and 14 feet.

At the end of June, 1904, the work was about half done at a cost of \$14,072.30, making total expenditure for the year \$14,951.04.

During 1904-5, the above contract was continued, sections 2 and 4 being completed at the beginning of September, at a further cost of, including extras, \$18,195.53.

In the spring of 1905, it was decided to have the contractors commence the construction of section No. 1, near the icebreaker.

This section has a length of 468 feet, exclusive of return corners. To the end of June, 1905, the sum of \$6,172.20 had been paid to the contractors.

In July, August and September following, section No. 1 was completed, as was $82\frac{1}{2}$ feet of section No. 3. It being found unwise to leave the town unprotected, even temporarily, for the remaining $334\frac{1}{2}$ feet of section No. 3, a second contract was entered into with the same contractors with the understanding that no payment would be made before July, 1906, the yearly appropriation being exhausted. The total expenditure during the last fiscal year amounted to \$21,079.84.

LES CUISSSES D'ALMA.

Les Cuisses d'Alma, in the little discharge of Lake St. John, is at three miles from the lake in the parish of St. Joseph d'Alma, and at seven miles from the village.

There are three rocks, called Cuisses d'Alma, and an island obstructing the Petite Décharge.

In 1901-2, blasting was done on the east side. Amount expended, \$575.92.

In the year 1902-3, the east side was completed and a portion of west side was done.

Amount expended, \$1,229.37.

During the year 1903-4, blasting was continued and completed on the two points obstructing the Petite Décharge, and work was begun on the island.

SESSIONAL PAPER No. 19

Amount expended, \$1,477.59.

During the year 1904-5, the blasting of the little island below was continued.

Amount expended, \$994.31.

During the fiscal year 1905-6, the blasting of the little islands below was continued.

Amount expended during the year was \$1,015.96.

LE TABLEAU (DESCENTE DES FEMMES.)

Le Tableau (Descente des Femmes) is a new settlement on the north side of the River Saguenay, about 61 miles from its mouth.

To promote colonization in that part of the Saguenay district, which has no other communication than by water, it was decided to build a wharf at this place.

During the year 1902-3, a block 40 feet in length, 30 feet in width, with a return of 80 feet by 25 feet, and two piers, 25 by 25 feet, placed 25 feet apart, were commenced.

The block was sunk in 18 feet of water. The block and the return forming an 'L' are built of close-face timber, 11 by 11 inches, sheathed at the outer corners with hardwood.

There is a landing slip on the outer block and one in the return, on the west side. The piers are built of round logs open-face.

Amount expended, \$5,033.71.

During the fiscal year 1903-4, the work was continued and an approach was built. The corbels were laid as well as part of the stringers.

The outer end of the structure is 38 feet high on top of stringers. The work was done by day labour. Amount expended, \$2,970.

The wharf is 193 feet in length and 25 feet in width. The outer block, 30 by 40 feet high, is not completed.

During the year 1904-5, the work was damaged by ice and had to be reinforced, the stringers and corbels were completed, fenders of 8 by 10 inches were on, and part of the planking done.

Expenditure, \$987.24.

During the fiscal year 1905-6, the work done consisted of placing sheath piling at the outer end of the wharf and in levelling the outside pier, which had settled.

Spring tides rise 17 feet; neaps, 10.

Amount expended during the year, \$593.32.

L'ISLET.

The village of L'Islet, in the county of the same name, is situated on the south shore of the St. Lawrence, fifty miles below Quebec.

Spring tides rise 21 feet; neaps, 13 feet.

During the fiscal year, the planking and stringers of the small wharf were entirely renewed. The wharf is 150 feet long by a width of 30 feet.

Three big boulders were also blasted and removed.

The expenditure for the year 1905-6, was \$485.11.

LOTBINIÈRE.

The village of Lotbinière, in the county of the same name, is situated on the south shore of the St. Lawrence, about forty miles above Quebec. It has no railway communication and entirely depends for exchange of supplies on bateaux and steamers from Quebec.

Spring tides rise 14½ feet; neaps, 8½ feet.

In 1897, the department constructed at this place an isolated block, connected to the shore by a removable approach of trestle bents.

On May 7, 1904, a contract was entered into for the construction of a permanent approach from the shore to the isolated block. Contract price, \$13,400. At the end of the fiscal year 1903-4, work was commenced, but not completed.

6-7 EDWARD VII., A. 1907

During the fiscal year 1904-5, the work under contract was completed.

A sum of \$4,000 was granted for repairs to the old block, but only a small amount could be used owing to the impossibility of procuring the necessary timber.

During the last fiscal year, the old block was thoroughly repaired; it was raised 18 inches, all decayed timbers were renewed, new sheathing and flooring put on and a waiting-room 20 x 24 feet, built at the south extremity of the approach on a crib specially constructed for that purpose.

Total expenditure during 1905-6 \$3,998.48.

MAGUASHA.

Maguasha is situated in the Baie des Chaleurs, in the county of Bonaventure, opposite the town of Dalhousie, New Brunswick, at the entrance of the river of the same name twelve miles from Carleton. The nearest railway station is La Nouvelle, on the Atlantic and Lake Superior Railway.

On June 18, 1904, a contract was entered into for the construction of a wharf at this place in the sum of \$7,500.

It consists of a stone approach 21 feet long, 20 feet wide on top with sides and end sloping 1 in 1; three cribwork piers 20 by 20 feet with spans of 20 feet, and an outer block 180 feet by 20 feet, the whole built of open-face cribwork, covered with 6-inch sheathings. The top of the flooring stands 4 feet above high water spring tides, or 13 feet 5 inches above low water spring tides.

During the last fiscal year, an extension to the wharf was built, 110 feet long by 20 feet wide, which now gives the wharf a total length of 440 feet with a height of 22½ feet at the outer end, where there is a depth of water of 18 feet at high water level. This extension was built under contract. The department also constructed a freight shed by day labour.

Expenditure during 1905-6, \$2,727.50.

MASSON.

Masson village, also known as Buckingham Junction, Labelle county, is situated on Rivière du Lièvre which empties into the Ottawa one mile below. In the opposite direction—three miles upstream—the Lièvre furnishes extensive water power, which is the 'raison d'être' of several flourishing industries in the town of Buckingham. The population of this district is about 6,000 inhabitants.

At its session of 1904, parliament appropriated \$5,000 towards the construction of a wharf on the River Ottawa near mouth of Rivière du Lièvre.

During the fiscal year 1904-05, construction of a permanent wharf was started, by day labour. When completed it will consist of a head block, 30 feet by 90 feet, providing for a depth of 8 feet at lowest water, with landings for the different stages of water level, connected to the shore by means of two approaches, 195 feet and 100 feet long respectively, by 18 feet wide at the top. Elevation of high level landing 16 feet above E.L.W.L. The understructure is of close-face cribwork and the superstructure of concrete cribwork, structural steel and dry masonry.

Expenditure during fiscal year 1904-5, \$5,063.60.

At its session of 1905, parliament appropriated the sum of \$4,500 and a further amount of \$850 at its session for the fiscal year 1905-6 towards the construction of this wharf.

On June 30, 1906, the head block was nearly completed and the stone walls of the approaches were built and partly back-filled. The structure is to be completed during the summer of 1906.

Expenditure during the fiscal year 1905-6, \$5,374.71. Total expenditure to date, \$10,438.31.

SESSIONAL PAPER No. 19

MILLE VACHES.

Mille-Vaches is a village in the county of Saguenay, situated on the north shore of River St. Lawrence, about forty-two miles below Tadousac. It contains one Roman Catholic church, three stores, one saw-mill, telegraph and post office.

Population about 600.

During the fiscal year 1904-5, a certain quantity of timber was bought in view of the construction of a wharf, at this place.

Amount expended, \$1,003.14.

During the fiscal year 1905-6, a wharf was commenced, the approach and four piers were built. The approach measures 45 feet in length by 25 feet in width, the piers are 20 by 20 feet, with a space of 25 feet between each pier and the abutment; the work is built of flatted round logs open-face cribwork, the corbels and stringers are 12 inches by 12 inches, the planking of 3-inch lumber. The wharf is provided with fenders, 8 inches by 10 inches, and fully ballasted with stone.

Amount expended during the year, \$4,969.19.

Spring tides rise 14 feet; neaps, 8.6.

MISTOOK.

Mistook, in the township of Taillon, on the Grande Décharge of Lake St. John, in the county of Chicoutimi, is also called St. Cœur de Marie; it contains a Roman Catholic church, post office, several stores, two cheese factories and two saw-mills.

During the year 1903-4, a pier, 40 feet long at bottom and 30 feet at top by 30 feet wide and 23 feet high, was sunk at 150 feet from high water mark. It was built with an ice-breaker in front, sheathed with 9-inch hardwood, and a landing slip on the outside face. The pier is built of round logs open-face cribwork, fendered at every 8 feet; the work was done by day labour. Amount expended, \$2,059.

During the fiscal year 1904-5, the wharf, which was commenced in 1903-4, was continued, five piers of 20 by 25 feet were sunk in place.

Amount expended, \$5,001.05.

During the fiscal year 1905-6, the wharf commenced in 1903-4 was continued; the piers were completed; the wharf is now 402 feet in length by 20 feet and 30 feet at outer end in width, 23 feet in height and 8 feet of water at extreme low water. The wharf is built on piers of open-face cribwork, with stringers and corbels of 12 by 12 inches, and planking of three-inch lumber. The sheathing, for which the timber is bought, remains to be done.

Amount expended during the year is \$4,013.35.

MONT LOUIS.

Mont Louis, a village of considerable importance and the first municipality below St. Anne des Monts, is one hundred and thirty-five miles below the nearest Inter-colonial Railway station, Metis. The harbour of Mont Louis, the largest and best situated of the St. Lawrence Gaspé coast, offers good water and good protection against all winds, except from northerly winds.

The landing pier, being from the west shore towards the east outside point of the bay, will, when completed, shelter against northerly winds.

Two cribs forming a total length of 185½ feet by 25 feet in width, partly built last year, were completed; 269 feet of approach were built. The roadway along the shore was built for a length of 580 feet and ballasted.

Fifteen and one-half feet of water at ordinary low spring tides are found at the outside end of the pier.

Spring tides rise 9½ feet; neap tides rise 5 feet.

The expenditure during 1905-6, was \$6,177.65.

6-7 EDWARD VII., A. 1907

MONTMAGNY.

Montmagny, in the county of the same name, is situated on the south shore of the St. Lawrence river, 37 miles below Quebec. It is a thriving little town of some 2,000 inhabitants.

During the last fiscal year, the sum of \$28.38 was expended in removing stones and boulders from the vicinity of the wharf.

MONTREAL HARBOUR—LOWER DIVISION.

Maisonneuve.

On July 25, 1900, a contract was entered into with Messrs. Poupore & Malone, for the construction of a high level pier and two bulkheads in the lower division of the Montreal harbour. Contract price, \$631,033.33. Work was commenced during the same year. During the fiscal year 1900-1, the expenditure amounted to \$49,296.45; in 1901-2, to \$201,722.69; in 1902-3, to \$251,320.47; in 1903-4, to \$209,104.96; and in 1904-5, \$74,442.69.

At the beginning of the fiscal year, July 1, 1905, there remained a length of about 160 feet of the foundation blocks to be put in position. These were laid in July, 1905, making the foundation of the concrete wall complete.

Then the moulding of the monolithic walls in concrete was resumed, and the whole completed 15th November, 1905.

In the meantime the refilling behind the walls was progressing, chiefly along the east wall of the main pier and later behind the east bulkhead. The operations were interrupted for the winter season on November 30, 1905, and resumed in May, 1906. Since the beginning of the season, the work has been only excavated in order to fill behind the walls and levelling the dumps made in former years.

The length of block foundation laid was 160 feet. The length of wall built to full height of 28 feet, including cost of superintendence, amounted to \$67,855.80.

MURRAY BAY.

The village of Murray Bay has a population of 3,500, and is situated on the north shore of the River St. Lawrence, at the mouth of the River Malbaie, 83 miles below Quebec.

During the last fiscal year a new movable slip was constructed. The hardwood sheathing of the outer face of the wharf that had been broken was repaired, and a small portion of the flooring renewed.

The expenditure for the fiscal year 1905-6 amounts to \$819.54.

NEW CARLISLE.

New Carlisle, a seaport town and port of entry, the shiretown of Bonaventure county, is beautifully situated on the north shore of Baie des Chaleurs. It is the present northern terminus of the Atlantic and Lake Superior Railway.

A pier, 606 feet long, from 29 to 49 feet wide, reaching 15 feet water at L.W.S.T., was built by this department between 1881 and 1883.

Owing to constant accumulation of sand, the depth along the outer end of the wharf has been greatly reduced, and during the last fiscal year, a contract was given for the construction of an extension, 210 feet long by 30 feet wide.

At the end of June, 1906, the extension was built up to 7½ feet above low water line.

A sum of \$525 was also expended, by day labour, in reducing the grade, in the hill leading to the beach, in constructing a new slip and in repairing the freight shed. Total expenditure during 1905-6, \$9,990.60.

SESSIONAL PAPER No. 19

NOTRE DAME DU PORTAGE.

On the south shore of the St. Lawrence, six miles west of Rivière du Loup, in the county of Temiscouata, is situated the village of Notre Dame du Portage; the place is much resorted to in summer by tourists.

Spring tides rise 19 feet, neaps, 13 feet.

During the fiscal year 1905-6, the construction of the wharf, which was begun in September, 1904, was continued; a length of 325 feet together with a stone approach, 60 feet long, is now built; the width is 21 feet at the bottom, with a batter of $\frac{1}{2}$ in 12, the mean height being 20 feet. The work is close face, with upright posts every 20 feet, screw bolted to the face timbers.

The construction is being performed by day-labour, the expenditure for the fiscal year 1905-6, was \$4,999.27.

PEEL HEAD BAY.

Peel Head bay in Missisquoi county, is at the head of Missisquoi bay, an arm of Lake Champlain, three miles from St. Sébastien and nine miles from Stanbridge on the Canadian Pacific Railway.

A right of way of irregular shape, forming an area of 33,928 square feet, and including an old stone wharf and a new hay shed, 60 feet by 40 feet, was bought during 1904-5, from Mr. Jamieson, at a cost of \$1,500.

It was the intention at first to build the head block of wharf, 96 $\frac{1}{2}$ feet long, 32 feet wide and 15 feet high, standing in 5 feet of water, of close-face 12 x 12-inch spruce timber, but this was modified later, and a superstructure of 12 x 12 re-inforced members on the Fraser system adopted from low water level, the substructure remaining as at first projected.

To this effect, a contract was entered into in December, 1905, with Mr. J. J. Fallon, of Cornwall, for the sum of \$10,399 and work commenced at the beginning of January. It has been carried on very expeditiously since and completed in June last.

The concrete superstructure now stands 82 feet long 32 feet wide and 9 feet high, totally filled with stone and floored with a 9-inch layer of mass concrete, mixed 1:3:5. An ice-breaker, inclined 1 $\frac{1}{4}$ in 1, formed also of reinforced massed concrete 1 foot thick, protects the wharf at the southern end. The stone approach is 18 feet wide at top, for the first 120 feet from head block and 25 feet wide for the remaining 295 feet to public road, both sides are riprapped, 1 in 1, with upper stones acting as guards. Three 100 pounds nigger heads complete the structure.

The expenditure during the last fiscal year amounted to \$2,066.22.

PETITE PERIBONKA.

La Petite Rivière Peribonka, in the county of Chicoutimi, is situated on the west side of La Grande Peribonka, near its mouth.

The pulp mill is situated at 4 miles above the Grande Peribonka.

During the year 1904-5, a portion of the snags and obstructions in the channel were removed.

Amount expended, \$626.16.

During the fiscal year 1905-6, the work of removing snags and obstructions from the channel was continued.

Amount expended during the year, \$610.14.

PETITES BERGERONNES.

Les Petites Bergeronnes, in the parish of Les Bergeronnes, is situated on the north shore of the St. Lawrence, fourteen miles below Tadousac.

There is an important saw-mill on the River Petite Bergeronnes.

6-7 EDWARD VII., A. 1907

The entrance to the River Petite Bergeronnes being obstructed by boulders, work was done to clean the channel, up to sawmill.

Amount expended during the year 1903-4, \$904.71.

During the fiscal year 1904-5, the removal of boulders in Petite Bergeronnes was continued.

Amount expended, \$898.58.

During the last fiscal year the work of removing boulders was continued, at a cost of \$1,209.10.

PHILLIPSBURG.

Phillipsburg is an incorporated village of Missisquoi county, on the east shore of Missisquoi bay, 2 miles from St. Armand station. It is a port of entry. Population about 500.

In July 1895, a contract was entered into for the construction of a wharf at this place. It was completed in 1897, at a cost of \$11,142.89, the municipality having contributed \$4,000.

It consists of a close-face crib head block, 120 feet long and 25 feet wide; of a trestle work approach, 302 feet long and 30 feet wide, and a stone and earth embankment, 285 feet long and 30 feet wide at top, with side slopes of $1\frac{1}{2}$ to 1. The outer face of breakwater is $17\frac{1}{2}$ feet high, sunk in $7\frac{1}{2}$ feet of water at low level.

In April, 1897, the embankment was considerably damaged by ice. It was repaired in July following, including the refilling with stone of the ballast chambers along outer face of head block. Total cost, \$711.79.

During April and May, 1903, the flooring of part of the head block and approach was renewed. Some repairs were also made to the front sheathing and to the stone embankment, at a total cost of \$580.67.

In 1903-4, minor repairs cost \$15.19.

In the spring of 1905, the head block was slightly damaged by ice. Repairs were made in August and September following. These consisted chiefly in resplicing some face timbers on southeastern corner, renewing some of the outside sheathing and about $\frac{1}{4}$ of the flooring. Work done by day labour at a cost of \$339.83.

POINTE A ELIE.

Pointe à Elie is the extreme southeasterly point of Allbright island, 2 miles east of the House Harbour Catholic church.

The steamer *Amelia* calls at Pointe à Elie for mails, freight and for shelter during northeasterly gales.

The construction of a landing pier and breakwater will give the best of shelter from all storms, and specially from easterly gales that prevail in the spring.

During the fiscal year 1902-3, a length of 115 feet by $22\frac{1}{2}$ feet wide of the pier proper was built, 850 feet of roadway, from 25 to 50 feet wide, and of an average height of 9 feet, was also built of stone, with a timber facing held in place by walings, posts and cross-ties.

During the fiscal year 1903-4, a further length of one hundred and ninety-five feet by $24\frac{1}{2}$ feet wide was built.

During the fiscal year 1904-5, a crib of 100 feet long by 26 feet wide, was built up to 18 inches above low water level and secured into position.

During the winter of 1905-6, the last crib built to 18 inches above low water mark suffered greatly through ice and heavy storms. The top timbers were carried away and a large part of the stone ballast thrown out. The services of a diver were required for a full month to gather the stone ballast around the pier and help in the reconstruction of that part under low water mark. The crib was completed to coping and a new crib, 100 feet long by 28 wide, was built ashore to a height of 15 feet, and the stone ballast to sink it into position was prepared.

The amount paid during the last fiscal year is \$11,912.63.

Spring tides rise 4 feet; neaps, 2 feet.

SESSIONAL PAPER No. 19

POINTE AUX TREMBLES.

Pointe aux Trembles, county of Portneuf, is a village on the north shore of the St. Lawrence, nineteen miles above Quebec, the nearest railway station is Pont Rouge, on the Canadian Pacific Railway, distant three miles.

Population about 1,250. Spring tides rise 17 feet; neaps, 10.

In February, 1904, the department acquired, from Athanase Delisle lot No. 87a, at Pointe aux Trembles, for the purpose of constructing a wharf thereon.

On June 28, 1904, a contract was entered into with Messrs. Dussault & Pageau, for the construction of a wharf, 550 feet long, 20 feet wide on top, except the outer 70 feet which will be 50 feet wide. The whole structure to be of close-faced crib-work, filled with stone ballast. The contract price was \$33,775.

During 1904-5, work under contract has progressed favourably, but owing to damages by ice, last spring, the completion of this wharf has been delayed.

Expenditure during 1904-5, \$9,958.17.

During the last fiscal year, a length of 450 feet, of the work under contract, was completed, and material for the construction of the remaining 100 outer feet procured and delivered on the ground.

Expenditure during 1905-6, amounted to \$7,421.50.

POINTE ST. PIERRE.

Pointe St. Pierre, county of Gaspé, is situated at the western entrance of Gaspé bay 21 miles from Gaspé Basin, and 15 miles north of Percé.

In order to afford shelter to fishing boats during the easterly winds, and provide deep water berths along the inner face for large schooners, the department decided to construct a wharf at this place.

In September, 1902, a contract was entered into with Heney & Smith, of Ottawa, to build a wharf 420 feet long.

Three cribs, 100 feet each, have been built in position, the fourth crib, 77 feet long, is being built.

The expenditure during the last fiscal year amounted to \$7,180.

POINTE VALOIS.

Pointe à Valois, county of Vaudreuil, is situated on the south shore of the Lake of Two Mountains, $4\frac{1}{2}$ miles west of the village of Vaudreuil and $2\frac{1}{2}$ east of Como.

In 1889-90, the old pier at this place, measuring about 80 feet by 16 feet, with head block of 45 feet by 20 feet and right of way thereto, was purchased from Chas. Valois, for the sum of \$690.

During the fiscal years 1890-91-92, the original pier was extended by adding, at the outer end, a block of ballasted cribwork, 135 feet long by 21 feet wide, with a return to the eastward, 55 feet by 25 feet; the total length of the work from the shore being thus increased to 235 feet. The depth of water available at the outer end of the wharf is now $6\frac{1}{2}$ feet at low water.

During the fiscal year 1896-7, a sum of \$210.72 was applied in effecting general repairs on this wharf.

In 1899, general repairs were made for a sum of \$104.97.

During the fiscal year 1900-1, more extensive repairs were made consisting chiefly:

In the prolongation of the stone embankment for a distance of 90 feet; in the renewal of a number of stringers, of all the flooring, of part of the front sheathing, and of the guard railing, the whole at a cost of \$805.60.

During the spring of 1905, the head block and stone approach were slightly damaged by ice, they were repaired at a cost of \$204.76.

In May and June last, considerable improvement was made to the approach.

6-7 EDWARD VII., A. 1907

The 20-foot span connecting said approach with head block was filled in with stone, the whole approach raised one foot and topped with a layer of gravel and small broken stone. A substantial guard railing, composed of cedar posts every 10 feet and 1½-inch iron pipes, completed the repairs at a total cost of \$600.

PORT DANIEL.

Port Daniel, Bonaventure county, is situated on the Baie des Chaleurs, 45 miles south of Percé, and about 75 miles north of Campbellton. It is an important settlement of some 600 inhabitants, mostly engaged in the fishing industry.

Spring tides rise 6 feet; neaps, 3 feet.

During the session of 1886, parliament granted an appropriation for the construction of a landing pier at this place. The work was executed under contract and completed in 1889, at a cost of \$20,487.58.

The pier was then 350 feet long, 20 feet wide for the first 200 feet, 30 feet wide for the next 100 feet, with a block, 50 feet square and 26 feet high, forming the outer end, where a depth of 13 feet, low water ordinary spring tides, could be found.

On November 15, 1889, a contract was entered into for the construction of an extension 75 feet long, 50 feet wide and 27 feet high; this work was completed in October, 1890, at a cost of \$12,586.44.

The pier had then a total length of 425 feet, built throughout of close-face cribwork.

During the fiscal year ended June 30, 1904, the sum of \$2,900 was expended in repairs and improvements; the work consisted in placing 200 feet of sheet-piling and refilling the pier with ballast, where necessary. The hill in the road leading to the pier was also lowered.

On May 30, 1904, a contract was entered into for the construction of an extension 100 feet long, 50 feet wide, built of square timber close-face cribwork, filled with stone and covered with 5-inch flooring.

Contract price, \$21,890.

During the fiscal year 1904-5, the superstructure was sunk in place and built up to about 5 feet above low water level.

Total expenditure during the fiscal year 1904-5, \$11,013.88.

During the last fiscal year, the work under contract was completed. The wharf has now a total length of 500 feet; the outer end, which is 29 feet high, stands in 26 feet of water at high water level.

The expenditure during the fiscal year 1905-6 amounted to \$9,652.15.

PORTNEUF.

Portneuf is a village in the county of Saguenay, situated on the north shore of River St. Lawrence, about fifty miles below Tadoussac.

There is an important sawmill there, also three stores, one Roman Catholic church, telegraph and post offices.

During the session of parliament of 1904, the sum of \$1,000 was voted for the construction of a wharf in the Bay of Portneuf.

Work was commenced and a pier, 40 by 20 feet, was sunk in 7 feet of water.

The wharf, when completed, will be 140 feet in length, built of two piers and abutments.

The outer pier will be in the form of an 'L,' 40 feet in length by 20 feet and 40 feet in width; the centre pier 20 by 20, the abutment 30 by 20, with spaces of 25 feet between the abutments and each pier.

The expenditure during the fiscal year 1904-5, was \$1,000.

During the fiscal year 1905-6, the work was continued; the abutment, 40 x 20 feet, two piers, 20 x 20 feet, and a portion of the outer pier were built.

Amount expended during the year, \$3,991.34.

SESSIONAL PAPER No. 19

Spring tides rise 14 feet; neaps $8\frac{1}{2}$ feet.

The work is built of round logs, well fendered; corbels and stringers are of 12-inch x 12-inch timber, and part of the planking is 3-inch spruce.

PORT ST. FRANCIS.

Port St. Francis, in Nicolet county, is situated on the St. Lawrence, about 4 miles north of the town of Nicolet.

During the autumn of 1905, the old private wharf at this place, consisting of a crib-head block, 210 feet long, and from 80 to 37 feet wide, filled with stone and sunk 14 feet high in 10 feet of water, with a stone and earth approach 250 feet long by 36 wide and a 34-foot right of way, 2,828 feet long, leading to public road, the whole forming an area of 8,330 square feet for head block and 104,652 square feet for approach and right of way, was bought from Mr. Alfred Duval for the sum of \$3,000.

In October, this wharf was demolished to E.L.W.L., and reconstructed close-face, 110 feet long at bottom and 100 feet at top, on account of ice-breaker, 12 feet wide from upstream and for a length of 40 feet and 37 feet wide for the remaining 70 feet, and 8 feet high, filled with stone and backed with stone and earth. The whole work, done by day labour, was completed October 31 last, and immediately opened to traffic.

Three days dredging was also done in front of the wharf.

Total expenditure during the last fiscal year, \$4,996.16.

QUEBEC HARBOUR.

In order to afford more accommodation for large ocean steamers to land immigrants and general freight, in the harbour of Quebec, the department decided, in 1902, to build an extension in a northerly direction to the old breakwater, built many years ago on the river front of the harbour. The total length of the extension will be 1,460 feet, which, with the 800 feet of the old work, will form four berths for the largest steamers.

The work consists of timber cribwork, 46 feet 6 inches wide at the base, 21 feet wide at top, filled with stone ballast, and built to a height of 3 feet above low water spring tides, the cribs are founded on a bed of rubble stone 4 feet in thickness, deposited on the sand bottom previously dredged to a depth of 46 feet at low water spring tides, leaving an available depth of 42 feet at the outer face of the cribs.

From the level of 3 feet above low water spring tides, the superstructure, 21 feet in height, is built of concrete, 16 feet wide at the base, 4 feet wide at the top and stands 6 feet above high water spring tides; the back of the cribs and concrete superstructure is filled with earth for a width of 150 feet, from the outer face of the concrete superstructure, forming an embankment, which will increase the available top area by over 300,000 superficial feet.

The work is being carried on under four different contracts with E. Dessault & Co., formerly Dessault & Lemieux, for the total amount of \$770,389.75. The first contract was signed on May 8, 1903, and the last on March 30, 1906, work was commenced in May, 1903.

At the end of the fiscal year 1904-5, four cribs, forming a length of 645 feet, were sunk in place and ballasted, the concrete superstructure was completed on a length of 462 feet, and 80,000 cubic yards of back filling had been deposited. The total amount expended at the end of that year was \$237,228.67.

During the fiscal year 1905-6, two cribs were sunk in place, the concrete superstructure was built on a length of 500 feet, the remaining 4 cribs to be sunk were built of an average height of 35 feet, and 250,000 cubic yards of back filling were deposited.

The new work is now partly utilized for landing passengers and freight, a temporary freight shed, 450 feet long, 80 feet wide, was built in the months of May and

6-7 EDWARD VII., A. 1907

June, to give traffic accommodation pending the construction of permanent sheds.

The amount expended on this work during the fiscal year ending June 30, 1906, was \$221,459.95.

REPENTIGNY.

Repentigny is a post village in l'Assomption county, on the St. Lawrence, two miles from St. Paul l'Ermite on the Great Northern, and seventeen miles northeast of Montreal.

On August 10, 1904, a contract was entered into with Lachance Brothers, of Ottawa, for the construction of a wharf opposite the Juneau property, about four-fifths mile from the village, for the sum of \$10,975. It called for the building:—

1. Of a close face crib head block, 73 feet 6 inches long by 40 feet wide, standing 19 feet high in 7 feet 3 inches of water.

2. Of a close face crib approach adjoining head block of a length of 230 feet and a width of 16 feet.

3. Of a stone approach, 435 feet long and 18 feet wide at top, with slopes of 1 in 1 on both sides; the whole forming a length of 705 feet.

In order to place the proposed wharf as near as possible to the centre of the village, a change of site was decided and that opposite the Telesphore Thouin property chosen, thereby lengthening the stone approach from 435 feet to 748 feet and the whole structure from 705 to 1,018 feet, but without modifying in any way its other dimensions. A further arrangement was made in December with the contractors, whereby they agreed to the change at an extra of \$5,039 above original contract price.

A right of way 820 feet long and 50 feet wide, was bought from Mr. Thouin, at a cost of \$100.

Work was begun early in January, 1905, and suspended on account of high water at the end of March of the same year. The stone approach was then two-thirds completed and the cribwork approach built to a mean height of 6 feet and fully ballasted. Expenditure during 1904-5 was \$6,498.95.

Construction was resumed in September following. At the end of June last, the crib head block and crib approach were completed but for the last two tiers and flooring. Some sixty toises of stone and riprapping on both sides will complete the stone approach.

Expenditure during 1905-6, was \$5,530.50.

RIMOUSKI.

The town of Rimouski, in the county of the same name, is situated on the south shore of the St. Lawrence, 180 miles below Quebec, its population is about 3,000 inhabitants. It is an important station of the Intercolonial Railway; it is also the place where the royal mails are transferred from steamers to the railway. Spring tides rise 15 feet. neaps, 9 feet.

The widening, repairing and other works of improvement, undertaken at the Rimouski wharf, in May, 1904, were continued during the fiscal year 1905-6, the following works were performed: The east wing of the basin, built to shelter the mail tender, was raised 3 feet upon a length of 100 feet and a width of 30 feet; all the stringers, cap timbers and planking have been renewed, 360 sheet piles of spruce, 10 inches square, were placed along the faces, driven 15 feet into the bottom and well secured to the face timbers.

In the void left on the northwest corner of the outer end, a crib of 67 feet in length, 40 feet wide and 32 feet high, has been constructed.

The outer end of the wharf on a length of 110 feet and a width of 30 feet, was raised 3 feet, a course of ties and all the stringers being renewed. The outer face has been sheathed with 150 pitch pine piles, 10 x 10 inches and 40 feet long, driven 15 feet into the bottom, secured to the face timbers and screw bolted to the inside vertical posts.

6-7 EDWARD VII., A. 1907

RIVER ST. LOUIS.

St. Louis de Gonzague is a post village in Beauharnois, 35 miles southwest of Montreal.

During the spring high water, the River St. Louis spreads over the farming lands, from the canal feeder to the village of St. Louis de Gonzague, a distance of about 7 miles, and thus causes considerable damages. During the summer, the river often overflows equally after a heavy rainstorm, and extensive fields of promising crops have been thus entirely lost.

Surveys of the river were made in November, 1903, and October, 1904. It was found that from the village of St. Louis de Gonzague to a distance of $2\frac{1}{4}$ miles up stream, several little rapids give a total fall of 6 feet. Above the canal feeder, the fall is about one foot per mile.

By proper deepening of the river bed and straightening of certain curves, the water could be lowered some 4 feet, which would be amply sufficient to protect the farmers along the banks.

To this effect, a small dredge was built during the winter of 1903-4, and placed in operation in October, 1904.

At the end of June, 1905, a cut had been made through the point known as Simon's, a 28 feet long and 12 feet wide steel span was erected in order not to interfere with the roadway. The total expenditure, 1904-5, including dredge operating staff, but exclusive of cost of dredge, was \$6,407.28.

Since July, 1905, some 5,000 cubic yards of rock and hard pan were blasted and removed in making a cut 700 feet long, 40 feet wide and of an average depth of 5 feet. General dredging, including that of blasted materials, was done for a length of about 1,500 feet. Total expenditure, 1905-6, was \$7,100.

RIVIERE A LA PIPE OR ST. HENRI DE TAILLON.

Rivière à la Pipe is a small village situated on the north shore of Lake St. John, at the mouth of the river of the same name, 7 miles north of Grande Décharge.

The wharf is situated on lot No. 118, township Taillon, about one mile westward of Rivière à la Pipe. It is built in a southerly direction, about 75 feet from shore, for a length of 200 feet and a width of 25 feet, and extends to 8 feet depth at the mean summer tide of Lake St. John.

It was built of close face cribwork up to 18 feet during the year 1897-98, and will stand 25 feet high when completed.

The Quebec government has built a good road from the public road to the present wharf, a distance of 2 miles.

During the year 1899, an addition of 50 feet long by 30 wide was built at the outer end of the wharf, to facilitate approach.

During the year 1899, the outer block was raised 5 feet, sheathed for a length of 120 feet and replanked; 35 toises of stone were also placed in the work.

During the year 1904-5, a certain quantity of timbers was bought in view of the extension of the wharf.

Amount expended, \$962.40.

The outside pier was unloaded in view to remove that pier, which is 40 x 25 feet, to form the outer end of the proposed extension.

Amount expended, \$332.02.

During the fiscal year 1905-6, the pier, 40 x 25 feet, was removed and placed to form the outer end of the wharf.

Two cribs, 20 x 25, were built at 25 feet from old work and 25 feet apart; these cribs were built of open face round logs.

Amount expended during the year, \$4,145.99.

SESSIONAL PAPER No. 19

RIVIÈRE AU RENARD.

Rivière au Renard is one of the most ancient settlements in the county of Gaspé.

It is the first important fishing station and business place met with, proceeding from Gaspé basin, along the south shore up the St. Lawrence. The population is estimated at 1,700. A small landing pier was constructed in 1895-6.

In 1899-1900, the sum of \$2,870.51 was expended for materials, such as timber, iron, plant, tools, &c., towards the construction of a landing pier and breakwater.

During the fiscal year 1900-1, the sum of \$2,013.36 was expended in purchasing additional timber.

Work was started in May, and on June 30, 190 feet of close-faced cribwork was in place, 5½ feet high, 28 feet wide at bottom and fully ballasted.

On the 2nd of June, 1903, a contract was entered into with Lyons & White, of Ottawa, for the building of an additional height of 600 feet.

The expenditure during the last fiscal year amounted to \$14,620.50.

RIVIÈRE BLANCHE.

The village of Rivière Blanche, or St. Ulric de Matane, county of Rimouski, is on the south shore of the St. Lawrence, twenty-one miles east of Metis and nine miles west of Matane.

Spring tides rise 14 feet; neaps, 8 feet.

During the fiscal year 1905-6, the hardwood sheathing of the outer block of the wharf was renewed upon a surface of 3,120 square feet, the timber used was black birch, 6 inches thick. A considerable quantity of the sand which accumulates every spring inside the west wing has been removed.

Three big boulders interfering with navigation were blasted and taken away.

The expenditure amounted to \$999.83.

RIVIÈRE DU LIÈVRE LOCK.

This lock is situated at Poupore on the Rivière du Lièvre, twelve miles above Buckingham, in the county of Labelle. It was built to overcome the difficulties of navigating the Little rapid, the dam in connection with it also flooded the Long rapid, six miles above, and rendered the river navigable up to the foot of the High Falls, a total distance of nineteen and a half miles above Buckingham.

Below the last named place, the Lièvre river forms a succession of rapids and falls, which give extensive water-power to a number of saw and pulp mills, over a distance of three miles, and the river empties into the Ottawa river twenty-one miles below the city of Ottawa. This stretch of navigable water above Buckingham is an important accommodation to the settlers of the upper part of the Rivière du Lièvre, who have no railway accommodation and it is only of late years that a highway has been built on one side of the river.

The lock and dam were completed in 1892, at a total cost of \$233,658.65; they have been kept in good working condition until October 11, 1903, when an extensive landslide occurred on the west side of the river just below the dam, and a width of about one-quarter of a mile from the river bank. Some 200 acres of land under culture were destroyed, together with farm houses and outbuildings, the farmers and their families barely escaping with their lives. The accident occurred at five o'clock in the morning. The river was completely choked for six hours; the water above rose to a height of 15 feet above its original level, and then scoured out numerous small channels through the earth filling formed by the landslides. The upper part of the dam was shoved against the head of water above and 7 feet in height of its top was carried away on a length of 200 feet; the dam is 250 feet long between abutments. Two days after the accident an officer of the department was ordered to the place with instructions to help as much as possible the carrying on of the traffic.

6-7 EDWARD VII., A. 1907

In a few days one of the channels, through the earth embankment, had been scoured out to a sufficient depth to permit one of the small steamers doing service on the river to be pulled through it by means of winches and intended to make the run above the dam, the other steamer remaining below. A portage road one and a half miles long was built on the east side of the river to connect its two navigable parts; two freight sheds, 20 x 12 feet, one at each end of the road, were constructed and contract was awarded to carry the freight and passengers by teams over the portage road.

At its session of 1904, parliament voted an appropriation of \$20,000 to be applied towards the reconstruction of the dam.

The amount expended during the fiscal year 1903-4 was \$5,517.15.

During the fiscal year 1904-5, the work of reconstructing the dam was carried on and completed. The top of the dam was covered with steel sheets $\frac{1}{4}$ inch thick. The slide in the centre of the dam was made 12 feet longer than the previous one.

Some 3,000 feet of three-ply booms were constructed and put in position above the dam. A ledge of rock, 25 feet by 30 feet, was blasted 10 feet deep, so as to prevent logs from jamming at low water.

The expenditure during 1904-5 amounted to \$29,234.92.

During the last fiscal year, a side pier, 400 feet in length with widths of 16 and 20 feet, and 20 feet in height, was constructed on the west side of the river; it is built of square timber close-face cribwork, filled with stone, covered with 3-inch planks and corners of outer end protected with steel plates. On the east side of the river, at the south end of the locks, the two old retaining walls were taken down and rebuilt, one 75 feet long and the other 50 feet long. On the north side of the locks, going up the river, three retaining walls were constructed, 100, 75 and 50 feet respectively, with width of 25 feet and height varying from 10 feet to 25 feet, filled with stone covered and sheathed with 3-inch plank. Three snubbing piers, 30 x 30 x 25, were renewed from bottom, filled with stone and corners protected with steel plates.

In June, 1906, the combination freight shed and stable at Poupore, was destroyed by fire. It was immediately rebuilt, 90 feet long and 30 feet wide, and covered with galvanized iron.

The lockmaster's residence was given two coats of paint, on the outside, the roof was repaired and painted. A length of 300 feet of wire fencing was built to replace that destroyed by landslide.

During low water, 25 boulders were removed from channel of river near Long Rapids, about a mile below High Falls.

The total expenditure during 1905-6 was \$48,502.06.

RIVIÈRE DU LOUP.

Rivière du Loup, or the town of Fraserville, is the chef-lieu of the county of Temiscouata. It is situated on the south shore of the St. Lawrence, 114 miles below Quebec. It is a thriving little town of 4,000 inhabitants, which contains several manufacturing concerns including two pulp mills.

The Rivière du Loup point, where the wharf is located, is distant two miles from the village; it is one of the best known and most frequented summer resorts of the St. Lawrence.

Spring tides rise 19 feet; neaps, 12 feet.

Owing to the action of the ice and waves, and also the considerable wear and tear due to the heavy lumber traffic, annual repairs are required on that wharf. During the fiscal year ended June 30, 1906, the following works were performed:—The shingle covering of the shed standing on the west side of the outer block, was renewed and painted. A new movable slip was built to replace the old one at the west side of the outer end; the sheaves of the old pulley blocks were renewed and the winches were thoroughly restored. The face timbers on the west side of the wharf, were sheathed on a surface of 4,500 square feet, with spruce 5 inches thick.

SESSIONAL PAPER No. 19

22,050 feet B.M. tamarack and 14,000 feet of elm and birch have been employed to renew and repair the sheathing of the face timbers of the outer end. Over the inclined railing of the stairway, on the west side of the wharf, iron steps were placed to facilitate the landing of passengers from small boats.

With materials supplied by the Department of Railways, a length of nearly 350 feet of the substructure of the railway track, upon the shore end of the wharf, was entirely renewed.

Lastly, two carloads of spruce deals, 3 inches thick, were used to renew the flooring. The work was done by day labour at a cost of \$5,841.64.

RIVIÈRE OUELLE.

The pier is situated at Pointe aux Orignaux, five miles distant of the village of Rivière Ouelle, in the county of Kamouraska, on the south shore of the St. Lawrence, opposite Murray Bay, on the north shore. A branch of the Intercolonial Railway, built from Rivière Ouelle station to the outer end of the wharf, bears trains connecting with a steamer which crosses the St. Lawrence several times a day during the summer season, calling at Murray Bay and other places on the north shore. In winter the service is also daily made.

Spring tides rise 20 feet; neaps, 12 feet.

The face timber on the west face of the wharf, being much weakened, a length of 110 feet was strengthened with a row of pitch pine sheet piles, 10 inches squares, 35 feet long, driven 6 feet into the bottom and securely fastened to the opposite face, with iron tie rods $1\frac{1}{2}$ inch in diameter. The old sheathing being worn out, a surface of 13,160 square feet was renewed with birch and tamarack. Four boiler plates, 6 x 8 feet, were placed on the southwest and southeast corners. The slip on the east side, which is 250 feet long and had been badly damaged by ice, was repaired.

On January 5, 1906 a contract, was awarded to Messrs. George St. Pierre & Co., for the construction of a spur, at the western end of the head of the pier. The crib will be 50 feet long, 33 feet wide and 41 feet high; it will be built of round timbers, 13 inches in diameter at the small end; from the level of 3 feet below low water spring tides, the sides and outer end shall be sheathed with concrete 18 inches thick, moulded with a batter of $1\frac{1}{2}$ in 12. The work is intended to afford protection against ice, for the ferry boat when standing at the outer end. The contract price is \$7,745. At the close of the fiscal year, the crib was ready to be set in place.

Total expenditure during the fiscal year, \$4,411.61.

RIVIÈRE VERTE (GREEN RIVER).

Green river, which flows through the parish of Isle Verte, empties into the St. Lawrence, about three-quarters of a mile west of Isle Verte church. During spring freshets, this river is liable to cause considerable damage by flooding the mills, scouring and disintegrating the land of the riparian properties. In order to prevent further damage, or at least, to reduce it to the lowest possible amount, it was decided to improve the channel of the river, to facilitate the waterflow in the spring. To that effect the following works were performed :—

A new channel, 800 feet long, 20 feet wide, was opened on the west side of the river; a dike 200 feet in length, 8 feet high, with widths of 16 feet in the base and 8 feet at the top, was built of open-faced cribwork, filled with stone, with a water tight sheathing in front. These works were done during the months of November, 1903, and May and June, 1904. The amount expended was \$3,698.

The work was continued during the year 1904-5, a second cribwork dike was commenced on the east side of the river, and a length of 275 feet was constructed; it had widths of 10 and 20 feet at the top and bottom respectively and a mean height of 10 feet; the rear side was vertical and the front inclined 1 in 1. The amount

6-7 EDWARD VII., A. 1907

expended during that year was \$5,499.61. A large quantity of timber, left on the site and paid for, was available for further works.

During the year 1905-6, the work was resumed and completed; the dike on the east side of the river was extended by the construction of a section, 265 feet long, the whole length of this dike being now 520 feet. The main channel of the river was widened and deepened on a length of 800 feet. The whole work was done by day labour. The expenditure for the fiscal year was \$5,800.49.

ROBERVAL.

The town of Roberval, in the County of Chicoutimi, is built on the east side of the River Outichouanish, near its mouth, on the south shore of Lake St. John, 200 miles east of Quebec city, and is the northern terminus of the Roberval branch of the Quebec and Lake St. John Railway which taps the main line at Chambord station.

In 1892-3, the department purchased from H. G. B. Beemer, Esq., for the sum of \$750 an isolated block of cribwork 75 feet long, by 30 feet, which had been built by him at the mouth of the river, 425 feet from the shore of the lake, together with the right of way to the public road.

During 1892-3 and 1893-4, this block was connected with the shore by means of an approach, 425 feet long by 25 feet wide, at a cost of \$5,469.06.

In 1894-5, a head block parallel with the shore, 50 feet by 30 feet and 30 feet in height, with a slip at the outer end, was added, and the entrance to the harbour was deepened and widened.

The cost of this work was \$4,200.41.

This pier, as completed in 1895, was 500 feet long and 25 feet wide generally, with the exception of the head block, which measures 50 feet by 30 feet, and has 8 feet of water along its outer face, at low water and 19 feet at high water during the season of navigation. In the winter the lake recedes beyond the head of the pier which is completely dry all round. During the year 1896-7, a combined freight and shelter shed, 45 by 24 feet, was erected on the head block at an expense of \$425.98.

In 1897-8, a block of cribwork, 75 by 25 feet, was sunk close to the crib purchased from Mr. Beemer, for the purpose of widening that part of the wharf to 50 feet. Amount expended, \$715.86.

In 1899 the wharf was destroyed by fire and rebuilt in 1900-1 for a length of 500 feet, a width of 30 feet and a height of 23 feet; a waiting-room, 15 by 18 feet, and a freight shed, 15 by 28 feet were erected on the wharf.

Amount expended, \$9,747.82.

During the year 1902-3, the head of the wharf was widened 15 feet on the south side for a length of 60 feet by the construction of a block of cribwork; from that block a trestle work was built to the shore, the trestles are 8 feet apart, and built of 12-in. by 12-in. spruce timber, with four stringers of 12 by 12 ready to receive the sleepers, this extension was specially made to allow the Quebec and Lake St. John Railway to reach the wharf.

Amount expended, \$4,577.11.

During the fiscal year 1903-4, the greater portion of the trestle work built last year was planked over with 3-inch plank, and between trestle work and the wharf. stringers were laid, resting on a cap piece 12 by 12 inches, the stringers are 10 by 10 inches and covered with planking of 3-inch deals.

The amount expended was \$653.45.

During the fiscal year 1905-6, the planking of the trestle work commenced in 1903-4, was completed.

Amount expended during the year, \$585.28, and \$3,890.99 for dredging.

STE. ADELAIDE DE PABOS.

Ste. Adelaide de Pabos, commonly called Little Pabos, is an important parish in the county of Gaspé. In 1888, in order to afford shelter to the fishing boats of the

SESSIONAL PAPER No. 19

locality, a breakwater was built, 200 feet long, 24 feet wide at bottom and the top of the seaward face sloping 1 in 1 on a height of 6 feet, leaving the top of the breakwater 18 feet wide.

In order to prevent the heavy seas from rolling over the breakwater, the top was remodelled during the fiscal year 1902-3.

The work consisted in removing the sloping face on the seaward side and building instead a perpendicular wall, 12 feet wide from the level of the foot of the old slope, on the total length of 200 feet and 9 feet high, or 3 feet higher than the original top; the top of the new work was planked over with 6-inch spruce deals.

During the latter part of the fiscal year 1904-5, material was bought to build an additional crib of 100 feet; during the month of June the crib was built 7 feet high and placed into position. In the last fiscal year the work was completed.

STE. ANNE DE LA POCATIÈRE.

The village of Ste. Anne de la Pocatière, in the county of Kamouraska, is situated on the south shore of the St. Lawrence, 74 miles below Quebec.

Spring tides rise 20 feet.

The wharf at that place consisted of an approach built of stone and earth and twelve piers, 20 feet square, connected by platforms of 25 feet spans.

During the winter of the year 1902, this wharf was almost totally destroyed by an ice-shove. In March, 1903, a sum of \$70.15 was expended to gather and save the broken timbers of the wharf. The reconstruction began in May, 1904; at the close of the fiscal year 1903-4, about one-third of the wharf was rebuilt and nearly enough timber to complete the work was bought and paid for. The expenditure amounted to \$4,280.70.

During the year 1904-5, the reconstruction was continued; the new cribs were rebuilt more substantially and of greater dimensions than formerly, being made 30 x 20 feet, instead of 20 feet square. Two openings near the outer end were closed and a stairway was built on the east side of the wharf; the corners of all the piers have been sheathed with spruce, 6 inches thick. The expenditure for that year was \$4,600.72.

In the months of August and September of the year 1905, the approach to the wharf, built of stone and earth, and which was liable to be scattered away by waves every spring, has been rebuilt with timber faces and cross-ties, filled with earth; it is nearly 500 feet in length, on a mean height of 5 feet. The expenditure during the fiscal year amounted to \$1,199.15.

STE. ANNE DES MONTS.

The Ste. Anne river flows into the St. Lawrence at the west end of the village of Ste. Anne des Monts, one of the oldest and most important establishments of the Gaspé peninsula, some one hundred miles below the nearest railway station, Little Metis.

In the fiscal year 1904-5, timber was bought to the amount of \$1,570.86 towards improving the entrance to the river.

During the month of June, 1906, more materials were bought and preparations made towards carrying out the proposed improvements.

The expenditure during 1905-6 was \$2,615.11.

STE. ANNE DU SAGUENAY.

The parish of Ste. Anne du Saguenay is situated on the north shore of the Saguenay river, seventy-two and one-half miles above Tadousac, and opposite the town of Chicoutimi. Besides the church and post office, the parish contains several stores, four cheese factories, a lime-kiln, a brick-yard, a potter-yard and sawmills.

Spring tides rise 17 feet, neaps, 9 feet.

There is an hourly ferry to and from Chicoutimi.

6-7 EDWARD VII., A. 1907

Construction.—As early as 1879, the Dominion government was urged to construct a landing pier for the accommodation of the inhabitants of the district. The request was not, however, considered until 1888, when a portion of the timber, for the proposed structure, was purchased at a cost of \$2,100.

In 1889, the pier was commenced from shore outwards, and at the close of the year 1888-9, a portion, 70 feet long and 30 feet wide, on its lower eastern face, had been completed at a cost of \$2,109.69. It was built of close-faced cribwork, filled with stone ballast.

In 1890, this shore block was extended 87 feet on a width of 27 feet, at a cost of \$2,045.50.

In 1891, a further length of 50 feet, of similar cribwork, 27 feet wide, was added at a cost of \$2,498.96.

In 1892, a head block, 30 feet long, 60 feet wide and 20 feet high, was built at a distance of 250 feet from the end of the work completed the previous year. Expenditure, \$2,262.11.

In 1896, this block was raised $8\frac{1}{2}$ feet and put on the same level as that of the work built out from shore, viz., 6 feet above ordinary high water spring tide.

With a view of completing the pier to shore, a sum of \$5,575.25 was expended in 1897, for the construction of two cribs, each $87\frac{1}{2}$ feet long and 25 feet wide, placed 25 feet apart and 25 feet from both the head and shore block.

During the year 1898, the three 25-foot openings left in the work were spanned, the flooring was laid and the structure completed to shore, at a cost of \$746.70.

Some boulders were removed in 1894, from the vicinity of the head of the pier, at a cost of \$99.30.

During the year 1899, the planking of that part of the pier, constructed in 1888, was renewed over a length of 250 feet, the sides of the crib built in 1897, were sheathed on a length of 200 feet and fenders were placed at the angles.

The work was done by day labour, at a cost of \$1,099.90. During the year of 1900, the outer block, for 110 feet, was sheathed with tamarack, and about 300 feet of the planking was renewed with 8-inch tamarack, at a cost of \$1,499.99.

During the year of 1901, the sum of \$2,507.36 was expended in renewing the planking of the wharf, over a length of 240 feet and a width of 25 feet. The upper part of the wharf was sheathed over a length of 110 feet with 6-inch tamarack, and a shed, 45 feet by 30 feet, was also erected on the wharf.

During the year 1901-2, a crib 40 feet wide and 27 feet high was constructed at the eastern extremity of the wharf; it is fully sheathed with 5-inch tamarack.

The flooring of the wharf was renewed on a space 200 feet long and 27 feet wide. Expenditure, \$3,103.07.

During the year 1902-3, a movable slip was built, a waiting room was commenced and the flooring of the wharf was renewed at different places.

Expenditure, \$1,523.30.

The wharf now stands 475 feet in length, 30 feet in width for the first 130 feet from shore, 27 feet for the next 325 feet and 100 feet for the last 30 feet; it stands $28\frac{1}{2}$ feet high above the bottom of the river, at its outer end, where there is $7\frac{1}{2}$ feet of water, at low water spring tide.

The wharf has a return, on the western side of the shore, 120 feet in length by 32 feet in width, this return is built from the wharf to the rock.

During the year 1903-4, the shed was covered with sheet-iron, the waiting room was completed, a freight-shed was built and the flooring was repaired.

Amount expended, \$957.08.

During the fiscal year 1904-5, a new pier, 20 x 20 feet, was constructed on the east side of the wharf, at 22 feet from the head block, close to the wharf; the head block is connected with the pier by stringers, supported on corbels, the span and the block are planked over, the pier is sheathed, provided with fenders and fully ballasted with stone.

SESSIONAL PAPER No. 19

The pier on the west side of the head block, built in 1901, was repaired and levelled, new stringers were put on and the planking renewed where necessary.

On the west side of the wharf a big boulder was removed by blasting.

Amount expended during the year, \$2,387.87.

During the fiscal year 1905-6, a landing pontoon was built at a cost of \$2,682.37.

ST. ALEXIS DE GRANDE BAIE.

St. Alexis de Grande Baie is on the south shore of Ha Ha bay, on River Saguenay, about 63 miles from its mouth.

In order to accommodate the increasing traffic of the locality and provide landing facilities for steamers plying on the River Saguenay, the sum of \$4,000 was appropriated at the session of parliament of 1898, for the construction of an isolated block. The pier is 15 feet long, 25 feet wide and 27 feet high, the outer end is at a distance of 1,446 feet from high water mark, spring tides.

1899-1900, two blocks, one 80 feet long and the other 68 feet, were built from the shore, with the view of connecting the outer block; those blocks are 25 feet wide and 20 feet high at the outer end.

Expenditure, \$3,999.

In 1900-1, an addition, 250 feet long and 25 feet wide, was built at a cost of \$4,016.63.

During the year 1901-2, three cribs, 25 feet long, 25 feet wide, filled with stone, were constructed 25 feet south of the work commenced in 1898; those cribs are placed 25 feet apart and measure 21, 22, 23 feet, respectively, in height.

Expenditure, \$4,000.01.

During the year 1902-3, an extension was built to the shore wharf, 150 feet long, 25 feet wide and 21 feet high at the outer end. The work is open-face cribwork, built of 11 by 11-inch square-faced timber, with fenders at every 10 feet. The flooring is of 3-inch red spruce. The whole is filled with stone.

Expenditure, \$3,994.71.

During the year 1903-4, five piers, placed 25 feet apart, were built; the first one, next to the old work, is 20 x 35 feet, with a landing slip; the four others are 20 x 25 feet. Part of the extension built the previous year was completed with stringers and flooring.

The span and the top of the first pier were also completed; the stringers are 10 x 12 inches; the four other piers are ready to receive the corbels and stringers. The piers are filled with stone.

Expenditure, \$4,082.35.

On January 4, 1905, a contract was entered into for the completion of the wharf. Work was commenced and eleven piers were sunk, nine of 20 x 25 feet and two of 25 x 30 feet; the work is still progressing.

The expenditure during the years 1904-5 is \$5,627.23.

During the year 1905-6, the work under contract was completed. The wharf is now 1,565 feet in length, by 25 feet in width; 580 feet are built in cribwork, the balance of blocks and spans. There are 14 piers of 20 x 25 feet, one of 25 x 25 feet, 5 of 30 feet x 25 feet and the outer one 50 x 25 feet.

The piers are built of round-logs open-faced cribwork, with fenders 8 x 10 inches and sheathed with 4-inch plank.

The superstructure is built on corbels and stringers, 12 x 13 inches, with a planking of 3-inch spruce.

The total height of the outer pier is 31½ feet, with 9½ feet water at low water spring tide.

Spring tides rise 17 feet; neaps, 10 feet.

Amount expended during the year, \$12,860.38.

6-7 EDWARD VII., A. 1907

ST. ANDRÉ.

The village of St. André, in the county of Kamouraska, is situated on the south shore of the St. Lawrence, about 15 miles west of Rivière du Loup and 100 miles from Quebec. The place is somewhat frequented as a summer resort.

Spring tides rise 19 feet; neaps, 12 feet.

The wharf owned by the Department of Public Works at St. André consists of an earthen embankment, 850 feet long, with a mean height of 7 feet, and nine piers connected by platforms of 30 feet spans.

During the year 1902-3, the earth approach to the wharf was repaired and greatly improved. In 1904, an addition to the wharf was built; it was 80 feet long, 26 feet wide on a height of 18 feet.

During the year 1905-6, a further extension of 100 feet in length was constructed, the width being 30 feet and the height 19 feet; the two cribs were built close-faced, thoroughly filled with stones. A slip, 45 feet long, has been built near the inner end of the wharf. The planking and stringers have been renewed upon a length of 332 feet and a width of 24 feet; 664 feet of capping were also replaced.

The expenditure for the fiscal year 1905-6 was \$6,499.14.

ST. BLAISE.

St. Blaise is a post village in St. John's county, on the Richelieu river and on the Grande Ligne branch of the Grand Trunk Railway, four miles from St. John's.

In May, 1905, in order to accommodate the important hay, butter and cheese traffic of the locality, the construction of a wharf was begun. The work consisted in the dredging of a trench some 1,000 feet long from the main channel shoreward, by a width of 50 feet and to a depth of 6 feet below E.L.W.L. Alongside the above and from the shore, a row 175 feet long of close piles with a return of 27 feet at outer ends forms the face of the wharf. These piles were cut 5 feet above low water, with cap on top and double fenders in front, and retained every 5 feet by a second series of piles, 12½ feet backward, 1½ inch iron anchor bolts 16 feet long securely connecting the two. Part of the above dredged material was used for filling behind the face piles, so as to form a roadway 20 feet wide, with a slope 1 in 1 on the upstream side which will be ripped.

At the end of June, 1905, all the piles had been driven in and the filling begun.

Since July, 1905, the caps and fenders have been put in place and the filling of head block nearly completed. About ¾ of the stone for approach was bought and put in place.

The expenditure during the last fiscal year amounted to \$1,495.75.

ST. CHARLES BARROMÉE.

St. Charles Barromée is a village situated on the north shore of La Grande Décharge of Lake St. John, in the county of Chicoutimi, twenty-one miles above Chicoutimi town.

Population about 1,000.

During the year 1904-5, a certain quantity of timber was bought in view of the construction of two landing piers.

Amount expended, \$995.95.

During the fiscal year 1905-6, two landing piers, one on each side of the river, 100 feet in length by 40 feet in height, were commenced. The work is of round timber open-face cribwork, fully ballasted with stone.

The amount expended, \$4,016.42.

ST. EDOUARD DES MECHINS.

The village of St. Edouard des Mechins, or Grands Mechins, in the county of Rimouski, is situated on the south shore of the St. Lawrence, thirty-five miles below

SESSIONAL PAPER No. 19

Matane. It has a population of 600, which consists chiefly of fishermen and lumbermen. Some farming is also done.

Spring tides rise 13 feet; neaps, 7 feet.

During the winter of the year 1905, a certain quantity of timber was bought with a view to the construction of a landing pier at Grands Mechins.

In the course of the fiscal year ended the 30th of June, 1906, the sum of \$556.61 has been spent to place this timber in a suitable way, to prevent decay and piling it out of the reach of high tides.

The sum of \$127.70 was also paid for timber delivered in December last, making a total expenditure of \$684.31 for the fiscal year 1905-6.

STE. FAMILLE, ISLAND OF ORLEANS.

Ste. Famille is a small village situated on the north side of the Island of Orleans, in the county of Montmorency, 16 miles below Quebec.

The flooring of the wharf at this place was renewed on a length of 150 feet.

The expenditure for the fiscal year 1905-6 amounts to \$353.30.

ST. FIDELE.

St. Fidele is situated in the county of Charlevoix, 12 miles below Murray Bay, on the north shore of the River St. Lawrence. Its population is 1,200.

This place is without railway communication and the trade depends entirely on navigation.

In order to help the lumber and general trade at this place, a contract was entered into with Messrs. François Tremblay and Ernest Savard, for the construction of a close-face timber crib wharf, 180 feet long by 30 feet wide, for the sum of \$15,266.

At the end of the fiscal year 1904-5, one-third of the work was done. During the last fiscal year the work was completed.

Total expenditure during fiscal year ended June 30, 1906, \$11,006.80.

ST. FRANÇOIS DE SALES.

St. François de Sales is a post village in Laval county, on Ile Jésus, half a mile from Terrebonne, on the other side of River Jésus. Population 850.

During spring, 1905, materials were bought for the construction of a high and low level wharf at this place at a cost of \$6,947.90.

The construction of the high level portion was begun in August last and completed at the end of June, 1906.

This high level portion is formed: (a) Of three concrete piers, distanced 40 feet at top, and measuring 40 feet 9 inches by 9 feet 8 inches at bottom, 21 by 6 feet at top (the upstream used as icebreaker being inclined $1\frac{1}{2}$ in 1 and nosed 90 degrees), 25½ feet high from low water and resting on close-face stone-filled cribs, 44 feet by 13 feet, standing in an average of 3 feet of water. These piers are spanned by 3 steel girders, composed of two outside 24-inch 80 lb. I-beams connected with two 18-inch 55-lb. I-beams, supporting 4 rows 3 feet 4½ inches distant of 10-inch 25lb. I-beams, resting on ½-inch 12 x 12 plates placed on top of concrete structure. (b) Of a stone and earth approach, 100 feet long, inclusive, of concrete abutment, inclined in front 1 in 12, also 25½ feet high, 3 feet deep at top with 2 1-foot retreats at back augmenting depth to 5 feet at bottom, and a 45-degree return wing on upstream side. All the concrete is reinforced vertically and horizontally with 1½-inch iron bars, plates, washers and nuts.

The right of way is given to the Crown by the municipality.

Expenditure during 1905-6, \$7,001.23.

ST. FULGENCE.

St. Fulgence (otherwise called L'Anse aux Foins) is a small village in Chicoutimi county, on the north shore of the Saguenay river, ten miles below Chicoutimi.

6-7 EDWARD VII., A. 1907

It contains one Roman Catholic church, four stores and two saw-mills.

During the year 1903-4, the construction of a wharf was commenced, it consists of a shore approach, 75 feet in length, 22 feet in width and 10 feet in height, and of a block of cribwork 25 x 22 feet, 14 feet high, placed at a distance of 25 feet from the outer end of the approach.

This work is built of round logs open face, and intended to be sheathed; the whole is fully ballasted.

Expenditure, \$998.37.

During the fiscal year 1904-5, the approach, the first pier and the other piers of 25 by 22 feet, placed at 25 feet apart, were completed. Fenders of 8 by 10 inches put on; the stringers and the corbels are of 12 x 12-inch timber, the planking is of 3-inch spruce. At the end of the year, 275 feet of the wharf was completed, except the sheathing.

Another pier was commenced and built 14 feet in height.

Expenditure during the year 1904-5, \$4,993.37.

During the last fiscal year, three piers 25 x 22 feet were built of an average height of 16 feet, the last pier, 30 x 30, was started and built for a height of 10 feet, the superstructure is completed up to the last pier with corbels, stringers of 12-in. x 12-in. and planking 3 inches.

The piers are built of round timber, the wharf when completed will be 513 feet long.

Spring tides rise 17 feet, neaps, 9 feet.

Total expenditure during 1905-6, \$5,016.98.

ST. GEDEON ISLANDS.

St. Gédéon Islands in the parish of St. Gédéon, are situated on the southeast shore of Lake St. John, 39 miles west of Roberval. Population of parish about 1,200.

During the year 1903-4, a certain quantity of timber was purchased in view of the construction of a wharf at that place.

Amount expended, \$1,982.19.

On July 13, 1904, a contract was awarded for the construction of a wharf in the Bay of St. Gédéon islands.

The work done consists in the construction of 7 piers, of 20 x 20 feet, placed 25 feet apart; the head block is 40 x 30 feet and stands 26 feet high at outer end, where two slips have been built. The abutment is 20 feet long. The work is completed.

Amount expended, \$7,500.

During the winter of the fiscal year, 1905-6, boulders around the wharf were removed, and in the spring, an approach and a freight shed were built at a cost of \$1,174.23.

ST. GODEFROY DE NOUVELLE.

St. Godefroy de Nouvelle, in the county of Bonaventure, is a parish situated at the foot of the Baie des Chaleurs, having a population of about 2,500 inhabitants, partly engaged in the fishing industry. There is also a considerable lumber trade done at this place. The railway station on the Atlantic and Lake Superior Railway is known under the name of 'La Nouvelle.'

On May 31, 1904, a contract was entered into for the construction of a break-water, in the sum of \$19,300.

The works under contract consisted of six contiguous cribs commencing at the shore; the shore end crib to be 150 feet long and the five others 100 feet each, giving a total length on top of 650 feet of continuous cribwork superstructure, with an average width of 20 feet. The depth of water at the outer end is 14 feet 3 inches, at high water spring tides.

SESSIONAL PAPER No. 19

Spring tides rise 7 feet.

This work was built and completed during the fiscal year of 1904-5.

During the last fiscal year, a freight shed was built, and the hill, in the road leading to the wharf, was lowered.

Total expenditure during 1905-6, \$750.

ST. IGNACE DE LOYOLA.

St. Ignace de Loyola, in Berthier county, is a small settlement on an island of the same name in the River St. Lawrence, between Berthier and Sorel, at the entrance of Lake St. Peter. Population of island 985.

During the spring of 1905, materials were bought at a cost of \$1,797.39.

Work on the wharf was begun in September following and completed at the end of October, at a further cost of \$724.21. It is situated opposite the church and on property given to the Crown by the church wardens. It consists of a pile block 49 feet long, 33 feet wide and standing 16 feet high in 8 feet of water at low level.

The stone foundations for the two ice-breakers, at the upper end of Ile de Pads, were prepared at the end of November and concrete work begun in May and completed in June last. They are of hand-laid stone, covered with a coat 1-foot thick of concrete mixed 1:3:5 and reinforced with 1½-inch iron bars. They stand 8 feet high and measure 6 feet square at top with two faces inclined 1½ in 1 and the other two 1 in 12, making the ground dimensions 18 feet 10 inches square.

The total expenditure incurred during the last fiscal year amounted to \$1,299.86.

STE. IRENE.

Ste. Iréné is a village situated in the county of Charlevoix, on the north shore of the River St. Lawrence, 78 miles below Quebec, and some six miles west of Murray Bay.

During the last fiscal year the most urgent repairs to the flooring of the wharf were done.

The expenditure for the fiscal year 1905-6 amounts to \$338.35.

ST. JEAN DES CHAILLONS.

St. Jean des Chaillons, a post village and parish in Lotbinière county, is situated on the River St. Lawrence, 57 miles above Quebec.

Population of village, 1,000.

In September, 1904, a contract was entered into with Mr. Chas. Pagé, for the construction of a landing pier at this place. Contract price, \$33,233.75.

Owing to delays experienced in securing deeds of land required, work had not yet been commenced on June 30, 1905.

Expenditure during fiscal year 1904-5 for plans, advertisements, tenders, etc., amounted to \$893.20.

The work under contract consists of a head block, 105 feet 6 inches x 46 feet 6 inches at the base, built up to an average height of 30 feet, with batter of 1 in 10 on river face, on east end, on part of south face and west elevation, which will bring the top to a width of 40 feet; an ice breaker on the west or up stream end, built with a slope of 1 in 1 from low water mark, reducing the length of the head block to 75 feet on top; and an approach of open-face cribwork, 210 feet long and 27 feet wide on top, built with slope of 1 in 1. The depth of water at outer end of wharf is supposed to be 16 feet at low water.

During the summer and fall of 1905, the substructure of the head block and approach was built to about 18 feet in height.

During the spring of 1906, and up to June 30, no work could be done on account of abnormal height of water.

The expenditure during the last fiscal year amounted to \$14,995.04.

6-7 EDWARD VII., A. 1907

ST. JEAN PORT JOLI.

The village of St. Jean Port Joli, in the vicinity of L'Islet, is situated on the south shore of the St. Lawrence, 60 miles below Quebec.

Spring tides rise 21 feet; neaps, 13 feet.

During the fiscal year 1905-6, the addition to the wharf, begun in 1904, was completed; the addition is 50 feet long, 38½ feet wide and 30 feet high; it is built close-face, and the depth of water at low spring tides is 6½ feet at the outer end.

The expenditure for the year 1905-6 was \$1,245.63.

ST. LAURENT, ISLAND OF ORLEANS.

The village of St. Laurent, in the county of Montmorency, is situated on the south side of the Island of Orleans, 10 miles below Quebec.

The flooring of the wharf at this place was repaired and renewed in many places, a small portion of the northeast face was resheathed with birch, and minor repairs were made to the movable slip and floats.

The expenditure for the fiscal year 1905-6 amounted to \$587.83.

ST. ROCH DES AULNAIS.

The village of St. Roch des Aulnais, in the county of L'Islet, is situated on the south shore of the St. Lawrence, sixty-six miles below Quebec.

Spring tides rise 21 feet, neaps, 13 feet.

During the fiscal year ended June 30, 1906, in order to strengthen the wharf and to protect it against the pressure of the ice, a row of sheet piles, pitch pine 10 inches square, was placed along its south face upon a length of 120 feet; these piles were sunken from 5 to 12 feet into the bottom, and secured to the face timbers with strong iron bolts, thereby binding top with bottom and giving great stiffness to the wharf to resist the pressure of the ice.

The north face of the addition built last year was also sheathed with birch, 6 inches thick, sunken 5 feet into the bottom. The approach to the wharf, which became submerged at every high tide, was raised 3 feet with stone and gravel.

The expenditure during the fiscal year of 1905-6 was \$2,323.78.

ST. SIMÉON.

St. Siméon is situated on the north shore of the River St. Lawrence, in the county of Charlevoix, 107 miles below Quebec.

On October 28, 1904, a contract was entered into with Mr. Nap. Trudel, for the construction of an approach to the isolated pier built some ten years ago. This approach consists of a close-faced timber crib, 425 feet long by 30 feet wide, filled with stone ballast.

During the fiscal year 1904-5, one-half of the contract work was done. The approach was completed on October 5, 1905.

The expenditure during the last fiscal year amounted to \$15,412.39.

ST. ZOTIQUE.

St. Zotique is a post village in Soulanges county, on the north shore of the St. Lawrence, two and a half miles above Côteau Landing.

The mooring pier at Côteau Landing having been found to be too near the head of the Côteau rapids, for the safety of rafts and steamers requiring to tie up, a mooring pier was begun at St. Zotique in 1881-2, and completed in 1884. It consisted of a close-faced crib head block, 100 feet long, 24 feet wide, sunk in 9 feet of water; and of a 12-foot approach, composed of 34 close-faced cribs, measuring 8 x 12 feet, placed at intervals of 20 feet and spanned with 12 x 12 stringers supporting flooring, making total length of pier 1,150 feet.

SESSIONAL PAPER No. 19

Expenditure in 1881-2 was.....	\$1,070 75
Expenditure in 1882-3 was.....	3,479 74
Expenditure in 1883-4 was.....	4,708 18

In 1885-6, the head block was lengthened to 132 feet 4 inches, the approach widened to 24 feet, the ice-breaker rebuilt and a guard railing placed on both sides at a cost of \$12,000.73.

In 1893-4, and in 1894-5, sums of \$2,490.75 and \$1,599.85, respectively, were expended in reconstructing part of the work and in general repairs.

During May and June, 1902, the ice-breaker was resheathed with 8-inch rock elm, part of head block and of approach refloored, several stringers renewed, the south-eastern corner of head block sheathed with rock elm, covered with steel boiler plate, and general repairs made to storehouse and guard railing, at a cost of \$1,099.61.

During August, 1902, minor repairs cost \$203.12.

In June, 1904, several stringers of approach and part of the flooring were renewed at a cost of \$509.01.

During July, 1905, minor urgent repairs cost \$58.50.

SAULT MONTMORENCY.

Sault Montmorency is a small town situated eight miles below Quebec, on the north shore of the River St. Lawrence. At this place the cribwork revetment wall, commenced last year, was continued for a length of 600 feet, thus giving a total length of 1,100 feet of this work.

This construction consists of an open-faced timber crib, filled with stone ballast. The height of the crib is 9 feet, and its width 10 feet.

The expenditure for the fiscal year 1905-6 amounts to \$7,158.

SOREL.

Sorel, an incorporated city, is situated on the Richelieu river at its mouth in Lake St. Peter. It is distant forty-five miles from Montreal by rail. Population, about 7,000.

In June, 1901, a contract was entered into with Messrs. McAuliff, Poupore, Malone & Weddell, for the construction of a deep water wharf at this place. The contract price was \$255,832.43.

Work was commenced at once in 1901-2, and completed in the month of April, 1905.

On November 13, 1905, an accident occurred to the said wharf in which 256 feet of the structure were destroyed, owing to the nature of the subsoil.

In March, 1906, some temporary repairs were made at the south end of the remaining portion of the pile wharf, so as to prevent undermining by the current.

In May, 1906, the dredge *International* was put to work, and the debris of the wrecked portions removed.

The expenditure during the last fiscal year amounted to \$11,614.15.

TERREBONNE.

Terrebonne is an incorporated town in Terrebonne county, situated on River Jesus, a branch of the Ottawa, and on the Canadian Pacific Railway, sixteen miles north of Montreal. It possesses important water-power. There are extensive limestone quarries in the vicinity. Population, 1,822.

It was decided to build a high and low level wharf at this place and in June, 1905, materials costing \$6,946.44 were bought to this effect.

Work on the high wharf was commenced in August, 1905, and completed in June last. The right of way thereto was given to the Crown by the municipality, it is 229 feet long, measured from the public road.

6-7 EDWARD VII., A. 1907

This high level portion is formed: (a) of three concrete piers distanced 40 feet at top, measuring 40 feet 9 inches by 9 feet 8 inches at bottom and 21 feet by 6 feet at top, (the upstream face used as ice-breaker being inclined $1\frac{1}{2}$ in 1 and nosed 90 degrees), $25\frac{1}{2}$ feet high from low water, and resting on close-faced stone-filled cribs, 44 feet by 13 feet, standing in an average of 3 feet of water. The piers are spanned by a steel structure, composed of two outside 24-inch 80 lbs. I-beams connected with two 18 inch 55 lbs I beams, resting on $\frac{1}{2}$ inch 12x12 plates, placed on top of concrete structure; (b) of a stone and earth approach, 91 feet long, inclusive of concrete abutment, inclined in front 1 in 12, also $25\frac{1}{2}$ feet high, 3 feet deep at top, with two 1 foot retreats at back augmenting depth to 5 feet at bottom, and a 45 degree return wing on upstream side. All the concrete is reinforced with $1\frac{1}{2}$ -inch iron bars and plates, washers and nuts.

Expenditure during 1905-6, \$6,995.54.

THREE RIVERS.

The city of Three Rivers is situated on the northern bank of the River St. Lawrence, at the mouth of the River St. Maurice, seventy-four miles below Montreal and sixty-eight miles above Quebec. Population 10,000.

In June, 1902, a contract was entered into with Mr. Randolph MacDonald, for the construction of a deep water wharf with a mooring face of 1,968 feet on the river side, and a return of 24 feet to connect the lower end of Dean's wharf. The contract includes the construction of an ice-breaker, 50 x 100 feet and 53 feet high or 23 feet above low water.

In 1902-3, the expenditure amounted to \$49,914.21; in 1903-4, to \$49,179.03; and in 1904-5, to \$39,201.35.

The water in the river has a very great annual fluctuation, so that work could not be carried on with all the celerity desired, owing to high water prevailing, the consequence being that it could not be finished for the time agreed upon in the contract.

During the last fiscal year, work progressed as satisfactorily as possible, under present circumstances; about 63 per cent of the total work is now completed.

The expenditure during 1905-6 amounted to \$89,893.13.

TROIS PISTOLES.

Trois Pistoles, in the county of Temiscouata, is an important village on the Inter-colonial Railway, twenty-five miles below River du Loup. The land in the vicinity is fertile, and the place is flourishing. It is somewhat frequented as a summer resort. Along the River Trois Pistoles stand large saw and pulp mills.

Spring tides rise 18 feet, neaps, 10 feet.

The harbour being much exposed to northeasterly winds, navigators were complaining of want of proper shelter for their craft. It was decided to build a breakwater across the entrance to the harbour.

During the month of May, 1904, the work was commenced, and was completed on November 15, 1905. It consists of a crib 350 feet in length, 20 feet wide at base, with a batter of 1 in 12 on the sides, and a height of 14 feet. Advantage has been taken of a high batture for the site of the breakwater, which stands about 2 feet above high water level. The crib is close-faced and thoroughly filled with stones.

The work was performed by day labour. A sum of \$486.57 was also expended to repair the flooring of the old wharf.

The expenditure for the fiscal year was \$1,798.91.

VILLE MARIE (BAIE DES PÈRES).

Ville Marie, Pontiac county, is an agricultural centre of importance, located on Baie des Pères. It is a point of call for passenger and freight boats plying on Lake Temiskaming. There being no railroad connections, landing facilities are indispensable.

SESSIONAL PAPER No. 19

In 1887, the Dominion government purchased from the Lake Temiskaming Colonization Railway Company their wharf for the sum of \$3,000. The wharf then consisted of an approach some 400 feet in length, 16 feet wide, leading to a landing head 26 by 23 feet in surface dimensions, the frontage of which is 26 feet. The whole structure being built of small open-face cribwork piers supporting the floor system, 15 feet above L.W.L.

In 1892, \$68.12 was spent on repairs; the work being thoroughly repaired in 1895 at a cost of \$945.63; and in 1896, \$25.65 was expended on the wharf. The head of the wharf has been added to materially by the navigation interests, having a frontage nearly 200 feet long.

At its session of 1903, parliament appropriated \$2,500 towards required repairs to the upper structure of the government part of the wharf; but no repairs were made that year because local interests demanded that the amount available be applied towards the construction of a wharf on a different site which, upon examination, proved to be too costly.

The sum of \$2,500 was revoted in 1904. During the fiscal year 1904-5 some urgent repairs were made at a cost of \$361.33; but on account of interference with the heavy traffic the work was only of a temporary nature. The sum of \$160.43 was paid to the Lumsden line steamers for repairs between 1896 and 1904. Expenditure during the fiscal year 1904-5, \$521.76.

At its last session, parliament again granted the sum of \$2,500 towards the reconstruction required. Work started with the close of navigation in 1905, and was nearing completion on June 30, 1906. The approach was widened to 18 feet, with the addition of a substantial handrailing; a gap on the north side, 13 by 25 feet, was replanked, and a slip, 10 feet wide, was built on the south side, increasing the frontage to 49 feet.

Expenditure during the fiscal year 1905-6, \$2,464.92.

Total expenditure to date, \$7,026.08.

YAMASKA RIVER.

The mild weather which prevailed in January last caused the water to rise to a considerable height, and bringing on the débâcle of the upper section of the river, carrying with it all the ice on its way down, to a few miles above its outlet. This happened on the 23rd and 24th of January, 1906. The St. Lawrence was then so low that the ice at the outlet of the Yamaska river was frozen to the bed of the river, and thus causing the ice to accumulate to a great height, at some places exceeding twenty feet. All the ice of the river was piled up in a distance of less than three miles. About 6,000 feet below the lock the banks of the river are so low that they are flooded, destroying properties by deposits of sand, and moreover endangering lives of people in the neighbourhood.

All the stop-logs were broken by the said ice, and have to be renewed for the winter closing of the Yamaska lock.

The new gates have operated very satisfactorily during the navigable season.

Owing to low water on the St. Lawrence and high water on the Yamaska river, the said gates could not be closed before the end of May. This is due to the lock being only two feet higher than the apex of the dam, which caused the lock to be flooded every freshet.

To remedy this, the lock will require to be raised from three to five feet.

PROVINCE OF ONTARIO.

ALLANDALE AND BARRIE.

Allandale, a ward of the town of Barrie, is situated on Kempenfeldt bay, an arm of Lake Simcoe, distant sixty-six miles north-west from Toronto.

6-7 EDWARD VII., A. 1907

At the last session of parliament, the sum of \$1,500 was appropriated to complete the Allandale landing pier, and on July 26 last authority was given to expend this amount by day labour.

Work was commenced on September 1 and was completed on June 30, and consisted in building a wharf composed of stone approach, 331 feet in length by 18 feet in width on top, with a block of cribwork 72 feet long by 18 feet wide and 4 feet high at the outer end thereof.

The sum of \$600 was appropriated for the removal of obstructions on the west side of the wharf at Bayfield street, Barrie. Work was commenced on September 1 and completed on December 23 last.

Total expenditure for fiscal year 1905-6, \$1,804.26.

BARRY'S BAY.

Barry's Bay, in the county of South Renfrew, on the Ottawa division of the Grand Trunk Railway, is at the head of a thirty-mile stretch of the Madawaska river, accessible to boats of shallow draught. On account of rich corundum deposits, a heavy traffic has developed.

On August 9, 1904, a contract was let to Mr. John D. McRae for the construction of this wharf. The structure consists of a close-face cribwork landing block, measuring 25 feet in width by 100 feet on the front where there is a depth of 3½ feet at lowest water. The flooring stands 6 feet above L.W.L. There are suitable wagon and railway approaches formed of stone rip-rap and earth filling. The former, 107 feet long, has a minimum width of 16 feet at the top, and the latter, 300 feet in length and 12 feet in top width, is built on a curve of 12° with the face of cribwork as tangent.

Construction commenced in September, 1904, and was completed in November, 1904, at a cost of \$4,770.74.

In the spring of 1905, the wagon approach and adjacent roadway, having suffered from freshets, were repaired at a cost of \$51.75.

In March, 1906, small stone and gravel were deposited next to the rip-rap wall of the railway approach to check the leaching out of earth filling at high water. The cost of this work was \$190.03.

Expenditure during the fiscal year 1905-6, \$190.03.

Total expenditure to date, \$5,012.52.

BAYFIELD.

Bayfield is a village in the county of Huron, situated on the easterly shore of Lake Huron, at mouth of Bayfield river, twelve miles south of the town of Goderich. There is a grist-mill and a saw-mill at this place, and the principal industry is fishing; it is also a favourite summer resort.

At the last session of parliament the sum of \$2,500 was appropriated for repairs to north pier and for dredging, and on July 26, last, authority was given to proceed with the work.

Between July 28 and August 8, 1905, dredging was performed by the Mariton Dredging Company of Goderich at entrance to piers and inner harbour, to depths of 14 feet and 12 feet respectively below water level.

General repairs were made to north pier between August 16 and November 10, 1905.

On September 26, 1905, about 84 feet of the superstructure of the south pier was destroyed by fire, and on October 12 authority was given to expend the sum of \$1,400 to repair damage done to this pier, which consisted of the reconstruction of the superstructure to a height of 9 feet above low water level; work was at once commenced, it was completed on December 30, 1905.

Total expenditure during fiscal year 1905-6 :—

SESSIONAL PAPER No. 19

Repairs, &c.	\$ 1,282 68
Dredging	2,359 50
	<hr/>
	\$ 3,642 18

BAYSVILLE.

Baysville is a small village of 200 inhabitants situated on the south branch of the Muskoka river, in the district of Muskoka, distant sixteen miles east of Bracebridge, the nearest railway point.

At the last session of parliament, the sum of \$500 was appropriated to complete the construction of a pile wharf, and on July 26 last authority was given to expend the amount by day labour.

Work was commenced on June 1 and completed on August 31 last, and consisted in the completion of the pile wharf on the west side of the river, 75 feet long by 25 feet wide.

Total expenditure for fiscal year 1905-6, \$527.90.

BEAVERTON.

Beaverton is situated in the county of Ontario, on the easterly shore of Lake Simcoe, about 60 miles northeast of Toronto. Population, about 2,500.

At the last session of parliament the sum of \$8,000 was appropriated, \$3,200 of which was for pile protection work, and the remaining \$4,800 for dredging. Authority was given on July 26 last to expend this amount by day labour.

Work was commenced on July 1 and is still in course of construction, and consists in dredging a channel 60 feet long by 9 feet deep from the outer end of old southerly pier to the mouth of the Beaver river, and the dredging of a turning basin which is to be 225 feet in width on the inside and 325 feet long. Also a row of close sheet piling 160 feet in length on each side of the proposed turning basin.

Dredging was commenced on May 22 last, and up to the present 16,310 cubic yards of material have been removed.

Total expenditure for fiscal year 1905-6, \$6,076.06.

BELLE RIVER.

Belle River is situated on the south shore of Lake St. Clair, and on the London and Windsor division of the Grand Trunk Railway, ninety-three miles from London and seventeen from Windsor. It is a French settlement of about 1,000 inhabitants. Farming is the principal industry in the neighbourhood.

At the last session of parliament the sum of \$5,200 was appropriated for the dredging of entrance to harbour and the renewing of close piling in harbour, and on July 26, 1905, authority was given to proceed with the work.

The dredging was performed by the Chatham Dredging Co., of Chatham, between August 28 and October 28, 1905, for the sum of twenty-five cents per cubic yard, scow measurement; 16,785 cubic yards of clay and sand were excavated.

During the month of March last, material was ordered for the construction of close piling in harbour, and work on same was commenced on April 2 and completed on June 18, 1906.

Work done consisted in the driving of twenty oak guard piles, 16 feet long, along the inner face of pile work and on each side of harbour; the construction of 20 feet of 3-inch close pile protection work, on easterly side of harbour, and 40 feet of similar work on westerly side of harbour.

Total expenditure during fiscal year 1905-6 :

Dredging	\$4,196 25
Close-piling	560 28
	<hr/>
	\$4,756 53

6-7 EDWARD VII., A. 1907

BENSFORT.

Bensfort is a small village on the Otanabee river, distant about 14 miles south of Peterborough.

At the last session of parliament, the sum of \$850 was appropriated for the construction of a wharf, and on July 18 last authority was given to proceed with the work by day labour.

Work was commenced on July 27, and completed on September 16 last, and consisted in the construction of a wharf with an approach 48 feet long by 12 feet wide, composed of cribs and spaces with an 'L' on the outer end 20 ft. x 40 ft.

Total expenditure for fiscal year 1905-6, \$847.66.

RIVER BLANCHE.

The Blanche river empties into Lake Temiskaming just west of the Quebec boundary. It is navigable to Tomstown, 26 miles from the mouth. On an average the width is 200 feet, and the depth 10 feet. The river runs through a clayey formation interspersed with thin sand strata dipping towards the stream. The landslides which are of common occurrence, have so obstructed the bed by the accumulation of sediment on account of the residual snags, that extensive works are necessary to restore to the settlers their only highway. Traffic is heavy, considering that one to two steamboats make the round trip of 90 miles from New Liskeard daily. The returns of one boat for the season 1905, show a traffic of 3,000 passengers and 200 tons of freight.

At its session of 1904, parliament appropriated \$7,000 to begin operations which, however, were postponed to the following season on account of comparative high water and lack of required plant. At the end of the fiscal year 1904-5, the sum of \$181.80 had been spent in preliminary work of building a snag boat.

Parliament appropriated \$9,500 at its last session. The snag boat 16 feet by 28 feet by 4½ feet was completed in September, 1905, and together with a small crew and a tug was in commission to the close of navigation, clearing 3½ miles of the river just below Tomstown and removing 150 snags. In places the snags lay interlaced in the bed of the river simulating a corduroy road. The snags were floated down stream in rafts, buoyed up by means of cedar spars.

The plant was completed by building during the winter months a house boat and two scows 50 feet by 16 feet by 4½ feet to dispose in turn of the spoils of the snag boat. Operations on the river proper were resumed on June 25th with the completed plant and tug, which showed increased efficiency.

Expenditure during fiscal year 1905-06.	\$7,895 73
Total expenditure to June 30, 1906.	8,077 03

BLIND RIVER.

Blind River is a village situated on the north channel, Lake Huron, in the district of Algoma, and is a station on the Canadian Pacific Railway. Extensive lumbering operations are carried on at this place.

Authority was given on May 8 last to expend the sum of \$1,050 for dredging between the lumber wharfs; the dredge working for Messrs. Dolsen & McEwen was employed.

Work was commenced on May 30, and completed on June 22, and consisted in dredging the slip between the east and west piers, at mouth of river, to a depth of 12 feet.

The dredge worked 205½ hours, removing 5,120 cubic yards.
Total expenditure for fiscal year, 1905-06: \$159.22.

SESSIONAL PAPER No. 19

BRACEBRIDGE.

Bracebridge is a town situated on the north branch of the Muskoka river, district of Muskoka, 125 miles by rail north of Toronto.

Authority was given to improving the approach to the new government wharf, and \$500 was voted by the municipality towards this work.

Work was commenced on April 25, and continued until June 5, and is completed, except for the placing of a railing along a portion of the east side, where the bank is high.

The construction of the roadway entailed the blasting and removal of about 400 cubic yards of rock, and the placing of about 1,200 cubic yards of gravel, earth and stone filling and is 18 feet wide on top and 650 feet long, and has a 10.6 per cent grade.

Two slips were made in the wharf 10 feet wide for the convenience of small craft.

Total expenditure for fiscal year, 1905-6, \$3,015.21.

BRONTÉ.

Bronté is a village in the county of Halton, on the north shore of Lake Ontario, 27 miles southwest of Toronto.

At the last session of parliament, the sum of \$8,000 was appropriated for repairs and dredging, \$4,000 for each, and on July 26 last authority was given to proceed with the repairs by day labour.

Work was commenced on August 5 and continued until June 29, and consisted in the thorough overhauling and renewing of the structures, and portions were added where necessary.

In doing the above work some 71,752 feet, b.m., pine, 3,960 lbs. of iron and 57½ toises of stone were used.

Total expenditure for fiscal year 1905-6, \$3,999.91.

BRUCE MINES.

Bruce Mines is situated on the north shore of Lake Huron, 45 miles southeast of Sault Ste. Marie, in the District of Algoma.

Authority was given on May 11 last to expend the sum of \$50 in repairs to the wharf.

Work was commenced and completed in August last, and in doing the work the following materials were used: 1,054 feet, b.m., hemlock plank and 50 yds. of gravel.

Authority was also given on April 6 last to expend the sum of \$100 in general repairs to the wharf, and work was commenced on the 4th and completed on June 26.

In doing this work the following materials were used, 5,440 feet b.m., plank, and 86 lbs. iron.

Total expenditure for fiscal year, 1905-6, \$47.65.

BURLINGTON CHANNEL.

Burlington channel, in the County of Wentworth, is simply a cut through a piece of low land which partly separates Lake Ontario from a large sheet of water called Burlington bay, enabling vessels to reach the wharfs at the city of Hamilton.

At the last session of parliament, the sum of \$5,000 was appropriated for additional stone filling, between the close sheet piling and cribwork of southerly pier, from near the Grand Trunk railway swing bridge to the outer end, and on July 26, authority was given to proceed with the work.

In doing the above work, some 3,474 cubic yards of stone were used.

Owing to the open winter and the numerous severe gales that occurred from the east and southeast, the easterly end of the lighthouse pier suffered severely and was

6-7 EDWARD VII., A. 1907

badly wrecked, which necessitated immediate temporary repairs in order to protect the piers and save the lighthouse; instructions were given to make the necessary repairs. Work was carried on at irregular intervals, as the weather would not permit continuous operation.

In doing the above work some 1,870 pounds iron, and 21,724 ft. b.m., pine were used.

A number of tie rods in the south pier were broken, and a number of braces displaced, and some were lost, which had to be replaced in order to retain the close sheet piling along the face of wharf in position.

In doing the above work, some 71 pounds of iron were used.

The swing bridge staff were employed from July 1 to January 12, when the lights were put out, and navigation closed for the season, commencing again on March 1 and continuing for the season.

Total expenditure for fiscal year 1905-6, \$19,069.33.

CALLENDAR.

Callendar, a town of some 1,000 inhabitants, is situated on the east shore of Lake Nipissing, on the North Bay Branch of the Grand Trunk railway, nine miles south of North Bay. Lumbering and general business are the chief industries.

Authority was given on August 3, to accept the offer of James McBurney to construct a wharf for the sum of \$500.

The wharf was completed on April 16, and is 80 feet long by 20 feet wide, composed of cribs and spaces. The three cribs are 16 x 20 feet with two spaces of 16 feet each.

Total expenditure for fiscal year 1905-6, \$500.

COBOURG.

Cobourg is a large town situated on the north shore of Lake Ontario, in the county of Northumberland, on the main line of the Grand Trunk railway, 66 miles east of Toronto.

At the last session of parliament the sum of \$5,000 was appropriated for repairs to piers, and on July 26 last authority was given to expend this amount by day labour.

Work was commenced on July 1 and completed on June 30, and consists in the construction of new cribs to replace the old piles at east pier, near lighthouse, 120 feet long with an average width of 30 feet and a depth of 20 feet, also planking same, also the construction of three cribs further in on same pier, 12 feet long, 10 feet wide and 6 feet deep from the water edge up. At the north dock of the inner harbour, repair to water edge of old cribs, length, 380 feet, width, 12 feet, including replanking same. Centre pier, re-cribing a washout 60 feet long, average width, 12 feet, and repairing and replanking part of this wharf, 120 feet long and 24 feet wide. Rebuilding the cross-pier of the inner harbour and putting new timbers on same from water edge 300 feet long and about 6 feet high and 15 feet wide, also planking same. West of Langevin pier, new timbers from water edge 24 feet long and considerable new planking, and other general repairs.

Total expenditure for fiscal year 1905-6, \$4,999.93.

COCKBURN ISLAND.

Cockburn island is situated in the district of Algoma, west of Manitoulin island.

On August 4 authority was given to expend the sum of \$250 for the construction of a shed on the wharf.

Work was commenced on September 7 and completed on October 9.

In doing the above work the following materials were used, 6,948 ft. b.m., hemlock; 426 ft. b.m., cedar; 575 ft. b.m., pine; 600 ft. b.m., tamarack, and 140 lbs. iron.

Total expenditure for fiscal year 1905-6, \$226.01.

SESSIONAL PAPER No. 19

COLBORNE.

Colborne is situated on the north shore of Lake Ontario, distant about fourteen miles east from Cobourg. Population, 1,000.

At the last session of parliament the sum of \$5,000 was appropriated for the construction of a wharf.

Plans and specifications have been prepared for the work, but, up to date, tenders have not been called.

The expenditure during fiscal year 1905-6 was \$32.24.

COLCHESTER.

Colchester is a village situated on the north shore of Lake Erie, in the county of Essex, about four miles south of Harrow, and about fourteen miles from the mouth of the Detroit river. Harrow is the nearest point with railroad connection. Population, about 200. It is the centre of a prosperous farming district, more particularly in the raising of corn, hogs and tobacco. Oxley, favourite summer resort, is about two miles east of Colchester.

During the last session of parliament, the sum of \$5,000 was appropriated for the construction of a wharf at this point, which wharf was also to serve the purpose of a groyne for the protection of property, which had suffered considerable erosion from wave action, and on July 25, 1905, authority was given to proceed with the work by day labour.

Operations were commenced on August 14, and work was carried on more or less continuously during the fiscal year. Continual heavy winds and some severe storms during the fall caused considerable delay and a consequent extra expense to this work.

The work performed up to June 30, 1906, consisted of a stone approach, 178 feet long, with 14 feet roadway to an average height of 4 feet 6 inches above low water level; 69 feet of close cribwork substructure, 18 feet wide with stone ballast, and 32 feet of concrete side walls; with all remaining footing blocks placed, and portion of filling behind walls completed the superstructure of this 69 feet.

There also remained on hand timber framed sufficient for the construction of 65 additional feet of substructure at outer end of wharf; also a small amount of cement, gravel, &c. to be used in the completion of the superstructure.

Total expenditure during 1905-6, \$5,050.80.

COLLINGWOOD.

Collingwood is situated on the south shore of Georgian bay, township of Nottawasaga, county of Simcoe, 94 miles by rail from Toronto. It is the terminus of the Northern and Hamilton and Northwestern Railway. There is an extensive trade in shipbuilding, grain and lumber, and it is the starting point for the steamers for Owen Sound, Sault Ste. Marie, Parry Sound, &c. Population 5,000.

As constituted now, the harbour is very large and commodious, being protected on the north and east sides by extensive breakwaters.

At the last session of parliament, the sum of \$30,000 was appropriated for the construction of a wharf. Plans and specifications were prepared, tenders were called, and a contract was let to Mr. Joseph Battle, on August 25, for the sum of \$29,900.

Work was commenced on December 26, and is still in progress, and consists in the construction of a wharf 75 feet long by 40 feet wide, having cribwork substructure with concrete superstructure.

Authority was given on May 10 last to employ Mr. C. S. Boone's dredge, to remove 14,000 cubic yards of material from the harbour. Up to date the dredge worked 364 hours removing 10,950 cubic yards, scow measurement.

Total expenditure for fiscal year, 1905-6, \$90,018.38.

6-7 EDWARD VII., A. 1907

CROWE'S LANDING.

Crow's Landing is situated on the south shore of Stoney Lake, distant 22 miles northeast of Peterborough, and is a small summer resort.

At the last session of parliament, the sum of \$1,500 was appropriated for the construction of a wharf at this place, and on July 26 authority was given to expend the amount by day labour.

Work was commenced on September 16 and completed on June 25, and consisted in the construction of a crib 80 feet by 20 feet, with a stone approach.

In doing the above work some 17,172 feet b.m., cedar, 9,633 feet, b.m., hemlock and 175 lbs. iron were used.

A right-of-way was purchased from Mr. Chris. Crowe for the sum of \$250.

Total expenditure for fiscal year, 1905-6, \$1,491.51.

CUMBERLAND.

Cumberland village, in the county of Russell, is located 20 miles below Ottawa and two miles south of Buckingham Junction, on the Canadian Pacific Railway. Besides the regular ferry service, the wharf provides for considerable traffic from passenger and freight boats plying on the River Ottawa.

At its session of 1904 parliament granted the sum of \$7,000 towards the construction of a wharf at this place.

On May 31, 1904, a contract was let to Mr. John D. Warwick for the construction of this wharf, which consists of a double-deck landing pier, 30 feet by 90 feet, built on a very irregular rock bottom. There are two approaches 18 feet wide, 20 feet and 78 feet long respectively. The structure is of close-face cribwork, structural steel and dry masonry construction. Elevation of high-level flooring 15 feet above lowest water, at which stage a minimum depth of 8 feet is available for navigation.

Work commenced in September, 1904, and was completed in March, 1905, at a cost of \$6,644. On June 30, 1905, a further sum of \$421.77 had been expended on the addition of two slips and in procuring the materials required for a freight shed.

In November and December, 1905, fenders were added, at a cost of \$106.94, altering the vertical face of wharf to one which recedes at the top to prevent the guard of boats from overlapping at high water. A two-storey freight shed 18 feet by 18 feet and shelter was erected at a cost of \$534.12, of which \$347.10 was expended before June 30, 1905, in procuring all the required materials.

Expenditure during the fiscal year 1905-06: \$293.97.

Total expenditure to date, \$7,359.60.

DEPOT HARBOUR.

Depot Harbour is on the north coast of Georgian Bay, in the district of Muskoka, 60 miles north of Collingwood, and three miles by water from Parry Sound. It is a point of transshipment from the great lakes steamers to the Grand Trunk railway, its distance from Ottawa being 263 miles.

In May, 1902, a contract was awarded to Messrs. Davis, Haney & Miller, for the construction of an extension, 525 feet long by 80 feet wide, to the elevator wharf and also a landing pier, 500 feet long by 150 feet wide, at the inner end of the harbour.

At the end of the fiscal year 1904-5 the work was nearly completed; it has since been finished and accepted.

The amount expended during the fiscal year ending June 30, 1906, was \$5,339.60.

DUNNET'S LANDING.

Dunnet's Landing is a small settlement situated on the south shore of Rice lake, three miles west of the village of Roseneath, and seven miles east of Harwood.

SESSIONAL PAPER No. 19

At the last session of parliament the sum of \$750 was appropriated for the construction of a wharf, and on July 26, authority was given to proceed with the work.

Work was commenced on September 4, and completed on April 20, and consisted in the construction of a gravel and stone approach, and pile approach 54 ft. 6 in. by 14 ft., with a 'T' on outer end 21 ft. by 26 ft.

Total expenditure for fiscal year 1905-6, \$820.19.

DYER BAY.

Dyer Bay is situated on the east shore of the Bruce peninsula, sixteen miles from Lion's Head. Population 100.

At the last session of parliament, the sum of \$700 was appropriated for repairs to wharf at this place, and authority was given on March 27, to proceed with the work.

Work was commenced on June 4 and completed on June 25, and consisted in rebuilding the superstructure of the outer crib eight courses, the second crib, four courses and the third crib, two courses.

Total expenditure for fiscal year 1905-6, \$699.26.

ECHO BAY.

Echo Bay is a small village on the 'Soo' branch of the Canadian Pacific railway, and is distant eighteen miles east of Sault Ste. Marie.

At the last session of parliament, the sum of \$700 was appropriated for repairs to wharf and strengthening same, and authority was given on August 28, to proceed with the work.

An agreement was entered into with Mr. Wm. Bermingham, on October 6, to do the above work, and same was completed on November 25.

The final estimate for the construction of the wharf at this place, under contract with Mr. Wm. Bermingham was given on September 21.

The sum of \$100 was paid to Mr. Wm. Bermingham for the construction of an approach to the wharf, 20 x 30 feet, on December 4.

On January 16, authority was given to expend the sum of \$400 in the construction of a warehouse, 15 x 43 feet, on the wharf, and an agreement was entered into with Mr. R. J. Thomas to do the work for the above amount. This work was completed on April 17.

Total expenditure for fiscal year, 1905-6, \$20,359.

FORT WILLIAM.

Dredging was renewed by the Great Lakes Dredging Company, on April 26, in deepening the entrance channel to the Kaministiquia river and in front of the Empire elevator; also in the river in front of flour and freight shed, and elevators A. B. C. and E.

All the dredges belonging to the Great Lakes Dredging Company commenced operations on their new contract for dredging the Kaministiquia and Mission rivers, on June 11.

The total amount of material removed during the fiscal year ending June 30, is 642,626 cubic yards, and the total expenditure for that period, \$74,221.25.

GODERICH.

Goderich is a town situated on the east shore of Lake Huron, in the county of Huron and at the mouth of the Maitland river, about sixty-eight miles from Sarnia, and sixty-three miles from London. It is the termini of the Buffalo and Goderich branch of the Grand Trunk railway and of the Guelph and Goderich branch of the Canadian Pacific railway. Population is 5,500. It is the county town and possesses many industries. Located on the harbour front is one of the largest flour mills in

6-7 EDWARD VII., A. 1907

Canada, the output being 1,200 bbls. a day, and which concern brings in, by boat, from Fort William, about two million bushels of grain annually for use at this port.

An elevator with a capacity of half a million bushels is about completed to replace the elevator burned down about a year ago. The new structure is of a most modern type, being built entirely of re-inforced concrete.

The Canadian Pacific railway have expended a large amount of money in securing entrance to this port, and will no doubt add very materially in increasing trade here.

The surrounding country is rich in farming produce. It is also a favourite summer resort.

At the last session of parliament the sum of \$70,000 was appropriated for harbour improvements, and on July 26, 1905, authority was given for the expenditure of \$17,000 on dredging and repairs to piers.

On August 8, 1904, a contract for the sum of \$74,000 was let to Messrs. Battle & Conlon, of Thorold, Ontario, for the construction of a breakwater, 500 feet long and 35 feet wide, built for the purpose of protecting entrance to harbour. The substructure of this work being composed of closed cribwork, filled with stone ballast with a concrete superstructure.

On September 8, 1905, authority was given for the expenditure of \$3,900, to provide 1,300 cubic yards of stone talus for the protection of outer face of breakwater.

The above work was commenced on January 9, 1905, and was in progress on July 1, 1906.

On October 19, 1905, the whole of the substructure and 180 feet of the superstructure was completed, when considerable damage was done to the work by a big storm which raged from the 19th to the 21st of October. Succeeding storms have damaged the whole of the 180 feet of superstructure built and a small portion of the substructure. Operations have not been resumed since date of storm mentioned.

Dredging was performed to a depth of 18 feet below low water level in the inner harbour, and to 20 feet below low water level at entrance to piers, by the Marlton Dredging Co., of Goderich, for the sum of twenty-five cents per cubic yard, scow measurement, between September 9 and November 2, 1905, on which latter date work had to be closed down owing to stress of weather.

In the execution of the above work, 596 cubic yards of rock, 8,695 cubic yards of sand and gravel, 1,022 cubic yards of hardpan, 453 cubic yards of clay and 3,569 cubic yards of sand were excavated.

On May 15, 1906, instructions were given to resume this work, same to be performed by Mr. W. L. Horton, of Goderich.

This work was commenced on May 16 and continued until June 14, 1906, when work was temporarily suspended, in order to utilize dredge for dredging urgently required elsewhere.

In the performance of this work 10,904 cubic yards of clay, sand and gravel, and 321 cubic yards of rock were excavated.

General repairs were made to piers at different intervals between September 1, 1905, and June 26, 1906, and consisted of sheathing 51 running feet of inner and outer face of north pier and 62 feet of south pier; also the reconstruction of 150 feet of inner end of north pier, from low water level to six feet above pier being 20 feet wide; decking of piers was renewed in various places, and new snubbing posts put in.

On June 9, 1906, authority was given to remove obstructions in harbour, consisting principally of sunken logs, and on June 25, work was commenced and was in progress at the end of the fiscal year.

During the fiscal year 1905-6 the total expenditure was :—

Construction, repairs, &c.	\$34,625 07
Dredging	13,701 90

\$48,326 97

SESSIONAL PAPER No. 19

GRAHAM'S BAY (OTTAWA RIVER).

At a point on the Ottawa river, known as Graham's bay, about two miles above Britannia village, a portion of the main highway in the township of Nepean, was being undermined by the waters of the Ottawa, and by the action of ice shoves and saw logs in the river, so that to prevent further encroachment, the work of building a protection cribwork was undertaken.

The plan adopted for this was a rough, open-work, stone-filled pier, carried to a point above high water line, and finished off on top with rip-rap to protect the road-bed as the foundation of the latter is at a considerably higher level than that of the top of the cribwork. The pier is 875 feet long, 10 feet wide at bottom, and reduced in width to 5 feet at top, and of an average height of about 10 feet. The bank of the river is clay formation, and excavations were made below the low water line for the foundation timbers. Along the front of the pier, stone was distributed to protect the foundation from being washed away. In rear of the crib, stone was deposited to fill the space between it and the shore.

The space between the top of the pier and roadway was sloped off with stone, to prevent the destruction of the road by 'washouts.'

When the pier was being built, two culverts were put in, extending clear through the structure, to carry off any water that might lodge in rear of the cribwork and cause scouring of the foundations.

GRAND BEND.

Grand Bend is on the westerly shore of Lake Huron; at the mouth of the Sauble river, about fifteen miles from Exeter which is the nearest railway station on the London and Wingham branch of the Grand Trunk Railway, about thirty miles south of Goderich.

On March 26, 1904, a contract was awarded to Mr. John D. Warwick, of Brockville, for the construction of a wharf and approach, for the sum of \$21,388. This work was completed on October 7, 1905.

The wharf is 648 feet long, including 100 feet of stone approach, and 20 feet wide. It is constructed of timber, and composed of close-faced cribwork with continuous superstructure. This wharf was built for the purpose of acting as a breakwater pier to the entrance to river, thereby affording a harbour of refuge to the fishing boats and light shipping in the district.

On November 4 last, authority was given to expend the sum of \$1,200 to repair damage done to wharf by great storm of October 19, 20 and 21.

The above work was commenced on December 7, 1905, and continued until June 30, 1906, and consisted in the driving of 48 feet of 6-inch by 8-inch and 8-inch by 8-inch 36 feet long sheet piling to close opening in pier; the raising to proper level of face timbers in several places on pier, where settlement had occurred through scouring caused by storms; placing stone talus at outer end of pier, repairing stone approach and placing considerable stone ballast in pier.

Owing to further settlement which occurred to this work through ice pressure and heavy storms during past spring, a further grant was required to complete repairs and place this work in a safe and finished condition.

Total expenditure during fiscal year 1905-6, \$11,977.32.

HAILEYBURY.

The town of Haileybury, on the west shore of Lake Temiskaming, is the chief lake port on the route of the T. & N. O. railway, 108 miles from North Bay. Naturally it links the rail and water traffic—navigation extends over a distance of 150 miles. It is five miles from Cobalt, the centre of an important mineral district.

6-7 EDWARD VII., A. 1907

In the fiscal year 1900-1 the building of a wharf was commenced to accommodate the local trade. The sum of \$2,000.22 was expended. No work of consequence was done during the fiscal year 1901-2, the expenditure being only \$84.50.

During the fiscal year 1902-3, active work of construction was resumed, the outlay was \$3,573.98. During the fiscal year 1903-4, a landing head 40 x 60 feet dimensions of sheet pile understructure and open-face cribwork superstructure with stone filling was built to a height of 7 feet above L.W.L., incorporating a smaller crib 20 x 30 feet dimensions, which had been sunk in 8 feet of water at an earlier date. The stone approach was added to materially, but not completed to its full height. The expenditure for the fiscal year 1903-4 being \$6,895.41.

During the fiscal year 1904-5, the stone approach, having proved its worth as an ice-breaker, was completed to its full height of 12½ feet on 85 per cent of its length, and to 9 feet on the outer portion, 75 feet long. It having been advisable to defer for the time being the placing of the full weight upon the foundation of the latter section, where some trouble was caused by subsiding. The landing head was extended and raised to an average elevation of 10½ feet above L.W.L. Expenditure for fiscal year 1904-5, \$6,008.74.

At its last session parliament appropriated the sum of \$3,600 to effect the completion of this wharf. Work was resumed at the close of navigation in December, 1905, and was completed in June, 1906.

The wharf consists of a dry masonry dike, forming the approach 16 feet wide on top, 516 feet long and landing head of pilework understructure and open-face cribwork superstructure sheeted with tamarack. The timber structure incloses the outer end of the approach and extends 50 feet beyond, having a frontage of 111 feet and affording 225 lineal feet of dockage, including 50 lineal feet for shelter on the south side. The elevation of flooring is 13 feet above M.L.W.L. at which stage a minimum depth of 8 feet is available along the front. Water rises 12 feet. The whole structure is built strong to withstand the heavy pressure from the ice on the north side. A freight shed 12 x 24 feet has been erected on the dock.

Expenditure for fiscal year 1904-5, \$3,599.63.

Total expenditure to date, \$22,162.48.

HAMILTON.

Hamilton, a city of 50,000 inhabitants, is situated on the south shore of Burlington bay, an arm of Lake Ontario.

At the last session of parliament, the sum of \$30,000 was appropriated for the construction of a wharf and on April 20 last, a contract was let to Mr. A. A. McDonald, for the sum of \$71,000, to construct this work.

Work was commenced on June 27, and is still in progress; it consists in the construction of 1,230 feet of revetment wall made up as follows: pile bents every 10 feet centre to centre, with concrete superstructure 10 feet wide on top with a face work of steel sheet piling.

Total expenditure for fiscal year 1905-6, \$1,003.94.

HEAD RIVER.

Head river is situated in the county of Victoria, it takes its rises in Mud lake and flows northerly through the township of Dalton.

At the last session of parliament, the sum of \$1,500 was appropriated for improving the waterway from Mud lake by the construction of an overflow channel, 480 feet long by 25 feet in width at the bottom, with a side slope of 1 foot to 1 foot, and an average depth of about 4 feet.

Work was commenced on September 27 and completed on December 21.

Total expenditure for fiscal year, 1905-6, \$1,593.11.

SESSIONAL PAPER No. 19

HONORA.

Honora is a village on the east shore of Manitoulin Islands, district of Algoma, distant 13 miles from Little Current.

At the last session of parliament, the sum of \$1,500 was appropriated for the construction of a warehouse on the government wharf, and on July 26 authority was given to proceed with the work.

Work was commenced on September 30, and completed November 10, and consisted in the construction of a warehouse 20 feet by 48 feet by 12 feet to the plate.

Total expenditure for fiscal year 1905-6, \$1,124.56.

JORDAN.

Jordan harbour is situated on the southwest shore of Lake Ontario, six miles westerly from Port Dalhousie, and is composed of two parallel piers extending out into the lake, affording a good landing, but no shelter from easterly gales. Large shipments of fruit are annually made.

Authority was given on October 21 last to expend the sum of \$420 for stone filling in piers of new bridge and talus along the approaches thereto. Stone has been secured for the work.

Total expenditure for fiscal year 1905-6, \$445.48.

KINCARDINE.

Kincardine is a prosperous town situated on the east shore of Lake Huron, thirty-nine miles south of Southampton, and thirty-two miles north of Goderich. It is the terminus of the Wellington, Grey and Bruce division of the Grand Trunk Railway. Population about 3,000. Principal industries are two furniture factories, boiler and machine works and salt works.

At the last session of parliament, the sum of \$5,000 was appropriated for repairs to piers and dredging, and, on July 26, 1905, authority was given to expend the sum of \$1,000 on repairs to piers.

Work was commenced on September 4, and completed on May 22, 1906, and consisted of the renewal of waling and decking at different points on piers, and the renewal of 120 feet of breast-work, 6 feet high, on easterly pier, in inner harbour.

A contract was let to the Marlton Dredging Co., of Goderich, for the dredging of the channel, between piers and the inner harbour, to the depth of 14 feet below low water level. Work was commenced on June 30, and continued until July 21, 1905, during which time, 11,755 cubic yards of sand was excavated.

On June 4, 1906, another contract was let to the Marlton Dredging Co., of Goderich, for dredging at outer entrance to piers, between piers and in inner harbour to the depth of 14 feet, below low water level.

Work was commenced on June 19, and completed on the 27th of the same month. In doing this work 4,850 cubic yards of sand were excavated.

The total expenditure during the fiscal year 1905-6 is as follows:—

Repairs to piers	\$1,056 99
Dredging	3,935 00

KINGSVILLE.

Kingsville is situated on the north shore of Lake Erie, in the county of Essex, about twenty-five miles east of the mouth of the Detroit river, and on the line of the Pere Marquette Railway. Population about 1,600. It is the centre of a prosperous farming district and a favourite summer resort. The electric railway from city of Windsor to this place is about completed.

At the last session of parliament, the sum of \$4,000 was appropriated for repairs to landing pier and dredging, and on June 30, 1905, authority was given to expend the

6-7 EDWARD VII., A. 1907

sum of \$800 on repairs to easterly pier. This work was performed during month of August, 1905, and consisted in the laying of a second decking 10 feet width of pier, the renewing flooring in storehouse.

Considerable dredging was performed by Manley & Co., Toronto, at this place during past fiscal year.

The total expenditure during fiscal year 1905-6. amounted to \$4,830.79.

LEAMINGTON.

Leamington is a prosperous village, situated on north shore of Lake Erie, in the county of Essex, about thirty-seven miles from the city of Windsor, on the lines of the Père Marquette and Michigan Central Railways. Population about 1,800. It is in the centre of a thriving farming district. Large and numerous oil wells have been discovered in the vicinity of Leamington, during the past year.

The telephone, mail and boat services are carried on with Pelee island from this place.

At the last session of parliament, the sum of \$1,000 was appropriated for the completion of repairs to wharf, at this point, and on June 30, 1905, authority was given to proceed with the work.

Repairs were started on July 1, and completed on September 13, 1905.

The work done consisted in sheet piling 10 lineal feet of face of outer end of pier; placing 40 feet of double waling; cutting off and spiking 250 feet of sheet piling, on westerly side of wharf; completing construction of warehouse; constructing two landing slips and renewing portion of flooring.

The completion of these repairs left this wharf in first-class condition.

The total expenditure during the fiscal year 1905-6, is \$999.33.

L'ORIGINAL.

The public wharf at L'Original, Prescott county, Ont., one of the most important on the Ottawa river, was repaired in September and October, 1905 (for further description see Annual Report, 1904-5).

The flooring on the northwest corner of the wharf was renewed as well as some sections of the trestle approach, 1,000 square feet of 3-inch tamarack plank being used. The stone rip-rap of gravel deposited on the roadway, 623 feet in length. The cost of these works was \$363.32.

In the spring of 1902 a large field of ice carried away the cribwork superstructure of the ice-breaker, damaging four piles of the wharf. The superstructure was rebuilt 10 feet in height, of open joint, dovetailed, square hemlock, with a batter of 1 in 4 on the sides and back and 1 in 1½ on the upper end, which is sheeted with a 10-inch tamarack apron, having the round face exposed. This work was filled with stone and thoroughly secured to the understructure by stepping and vertical posts. The ice-breaker, 155 feet above the wharf, measures 20 feet x 30 feet at the base. The cost of reconstruction was \$457.16.

Expenditure during the fiscal year 1905-6, \$820.48.

Total expenditure to date, \$30,089.60.

MEAFORD.

Meaford is an incorporated town in the county of Grey, on the west side of the Georgian bay, twenty-one miles west of Collingwood, and twenty miles to the eastward of Owen Sound. It is the terminus of the northern division of the Grand Trunk Railway. Population, 2,500.

On August 23, 1904, a contract was let to Messrs. Kastner & Porter, for the sum of \$59,800, to construct a breakwater pier, 450 feet x 30 feet, of cribwork with concrete superstructure.

SESSIONAL PAPER No. 19

Work was commenced on April 6 and completed on June 30, less the removal of 'L' of old pier for which the sum of \$1,200 has been retained.

Total expenditure for fiscal year 1905-6, \$117,658.58, including dredging.

NEWCASTLE.

Newcastle is situated in the county of Durham, on the north shore of Lake Ontario, forty-seven miles east from Toronto. It contains large woollen mills, a tannery and implement factory. Population about 1,000.

At the last session of parliament the sum of \$3,800 was appropriated for repairs to piers, and on July 26 last authority was given to proceed with the work by day labour.

Work was commenced on September 11 and completed on June 12, and consisted in the construction of a cribwork pier at the west side of the entrance to the harbour, 70 feet x 16 feet x 13 feet.

Total expenditure for fiscal year 1905-6, \$3,000.95.

OLIPHANT.

Oliphant is a district or post office centre on Lake Huron, in the county of Bruce, and is eight miles distant from Wiarton. It is the principal point of communication between mainland and the adjacent 'Fishing Islands.'

On December 14 last, authority was given to expend the sum of \$200 on urgent repairs to wharf, and work was commenced on March 5 following and completed on May 30, 1906.

The work consisted of the raising and levelling of the whole of the stone approach, 540 feet long; the laying of a stone walk, 3 feet wide along centre of this approach, said walk being composed of stone flags, 3 feet by 4 feet and 3 inches thick; sodding the remainder of top of approach to prevent scouring from wave action; and the placing of about 5 cords of stone talus at outer end of wharf, which repairs left this wharf in excellent condition.

OSHAWA.

Oshawa is a town of some size situated on the north shore of Lake Ontario, in the county of Ontario, on the main line of the Grand Trunk Railway, 34 miles east of Toronto.

At the last session of parliament, the sum of \$700 was appropriated for repairs to sheds on the wharf, and on July 26, last, authority was given to proceed with the work by day labour.

Work was commenced on September 2, and completed on June 25, and consisted in the addition of 18 feet to the south end of shed for an open shelter, and 16 feet on the north end for an enlargement.

Total expenditure for fiscal year 1905-6, \$699.99.

PARRY SOUND.

Parry Sound is situated on the east shore of Georgian bay, in the district of Parry Sound. Population, 3,000.

A contract was let to Mr. A. A. McDonald on April 17 for the sum of \$8,925 for the construction of a wharf 500 feet in length by 30 feet in width; the work was completed on August 22.

Total expenditure for fiscal year 1905-6, \$9,083.20.

PORT ARTHUR.

Dredging was renewed on May 8, by the dredges of the Great Lakes Company, in the entrance channel and in the channel to King's elevator, and ceased further

6-7 EDWARD VII., A. 1907

dredging in the harbour on June 9, to commence work on their contract for dredging the Kaministiquia and Mission rivers.

The dredge *I.X.L.* and plant belonging to Mr. Robert Weddell, arrived from the east on June 5, and commenced dredging on the 8th, in the entrance channel to the harbour.

The temporary protection works, erected last season to protect the Canadian Northern Coal Dock, and the Atikokan Iron Company's property, from the heavy seas that prevail in the autumn, were completely carried away by the breaking up of the ice this spring.

The total amount of material removed during the fiscal year ending June 30, is 709,034 cubic yards, and the total expenditure for that period is:—

Dredging.	\$151,573 28
Protection works, &c.	6,902 81
Total.	<u>\$158,476 09</u>

PORT BRUCE.

Port Bruce is situated at the mouth of Catfish creek, in the county of Elgin, on the north shore of Lake Erie, about 5 miles south of Aylmer. Population about 100. Principal industry is fishing, in the persuance of which it ranks as an important point.

At the last session of parliament, the sum of \$5,000 was appropriated for repairs to piers and dredging, and on July 26, 1905, authority was given to expend the sum of \$4,000 for repairs; authority having been previously given for the expenditure of \$1,000 on urgent dredging required, which work consisted in the dredging of a sand bar which had formed at entrance to piers and the dredging of a channel 50 feet wide, 450 feet long to a depth of 11 feet below water level.

In doing the above dredging some 4,135 cubic yards of sand were removed.

Repairs and construction on the east and west piers commenced in September, 1905, and were carried on, more or less continuously, until June 13, 1906. The work performed consisted in the completion of two top rows of face timbers with cross-ties, of 465 feet of easterly pier, and the part filling of same with stone ballast; the renewal, from low water level to 6 feet above same, of 140 feet of outer end of westerly pier, which was badly damaged and partly carried away by the storms during month of October, 1905.

The total expenditure during the fiscal year 1905-6 is as follows:—

Repairs to piers.	3,997 17
Dredging	950 59
Total.	<u>\$4,947 76</u>

PORT COLBORNE.

Port Colborne is situated on the north shore of Lake Erie, in the county of Welland, about twenty miles west of the city of Buffalo. It is the terminus on Lake Erie of the Welland canal, and as such is a point of great importance in connection with the transportation of grain and other freight from the west to the St. Lawrence ports.

In 1901, it was decided to improve the harbour of Port Colborne, in such a way that it might be available as a transfer point for all kind of freight, from the largest vessels plying on the great lakes to canal-size steamers, and for this purpose the Department of Railways and Canals was entrusted with the construction of docks, elevators and other terminal facilities, while the Department of Public Works undertook the construction of two breakwaters required for the protection against storms of the commercial docks.

SESSIONAL PAPER No. 19

The first or western breakwater was practically completed in June, 1904. Its total length being 4,424 feet, the outer 2,400 feet is 50 feet in width and the remainder 25 feet in width and the height of the break 11 feet above low water. The structure was built of timber cribwork, but the whole of the covering is concrete $1\frac{1}{2}$ feet in thickness. At the outer end a block, 100 feet long by 60 feet wide and 13 feet above low water, carries a concrete lighthouse built by the Department of Marine and Fisheries. Along the south or exposed face, is deposited a stone embankment reaching to a height of 1 foot above low water.

During the fiscal year 1904-5, 3,000 cubic yards of large stone were added to this embankment, at a cost of \$9,000.

In 1905-6, an additional quantity of 12,000 cubic yards of large quarried stone was deposited in the embankment, at the rate of \$3.25 per cubic yard.

The second or eastern breakwater is located to the east of the entrance to the harbour and canal; the gap between the two breakwaters being 600 feet.

The structure is 2,460 feet in length and 35 feet in width; the understructure to within one foot of low water mark is of timber cribwork, while the superstructure to a height of 11 feet above low water mark, is of concrete cribwork, well filled with stone ballast.

The contract for this second breakwater was awarded to Mr. M. J. Hogan, on June 8, 1904, for the sum of \$179,000, and the work was commenced early during the fiscal year 1904-5.

During the last fiscal year, this breakwater was completed at a total cost of \$179,000, the contract price.

The total expenditure during 1905-6 amounted to \$115,182.93.

PORT DOVER.

Port Dover is situated on the north shore of Lake Erie, about forty miles south-east of Woodstock and fifty miles west of Port Colborne. It is the termini of the Georgian Bay and Lake Erie division and Port Dover and Hamilton division of the Grand Trunk Railway. Population, about 1,200. It is a favourite summer resort.

At the last session of parliament, the sum of \$5,200 was appropriated for harbour improvements, and on July 26 last, authority was given to proceed with the work.

Repairs to piers were commenced on August 18 and completed June 13, 1906. The work performed consisted of the reconstruction of 25 feet of the superstructure of easterly pier, to a height of five feet above low water level, and filling of same with stone ballast; the extension of 135 feet to outer end of easterly pier to replace a portion of pier which had been destroyed by previous storms. This new work consisted of 135 feet of close face cribwork, 18 feet wide, filled with stone ballast and reaching to a height of 5 feet above low water level and covered with 3-inch planking; the construction of 60 feet of sheet piling to protect inner face of west pier; also the necessary dredging of berth for extension to pier, in doing said dredging some 72 hours' work was performed by Mr. C. S. Boone's dredge.

The upper end of this work is re-enforced by 10-inch sheet piling, across the end and on returns, and with iron straps on corners.

Considerable bad luck was experienced in the prosecution of this work, as the necessary dredging of berth for new crib was performed and crib was placed, and partly filled with stone ballast last fall, it was moved from its position and partially destroyed by heavy storm, on November 25, 1905; in consequence the crib had to be rebuilt and further dredging of berth was required, all of which increased largely the cost of the work. This pier is now in good condition.

On October 24, 1905, authority was given to expend the sum of \$3,000 on dredging between piers and at outer entrance to same, and for the dredging of a turning basin in inner harbour to rock level, or to average depth of 14 feet below low water level; work to be performed by Mr. C. S. Boone, of Toronto. In the performance of said

6-7 EDWARD VII., A. 1907

work 7,448 cubic yards scow measurement, of clay and sand were excavated. The work was commenced on October 26 and closed down for the winter on November, 20, 1905.

On May 2, 1906, authority was given to expend the sum of \$400 in re-dredging berths for cribs; also, on May 14, authority was given to perform further dredging, if same was required.

The total expenditure during the fiscal year, 1905-6, amounted to \$5,511.15.

PORT HOPE.

Port Hope is situated in the county of Durham, on the north shore of Lake Ontario, 63 miles east of Toronto, on the Grand Trunk Railway, and has a population of 4,188. The chief trade is in lumber and grain.

At the last session of parliament, the sum of \$5,000 was appropriated for repairs to the piers, and on July 26 last, authority was given to proceed with the work by day labour.

Work was commenced on September 4 and completed on June 30, and consists in rebuilding the wharf north of the freight shed for 192 feet in length by 32 feet in width and 5 feet in height, 60 feet of which had to be built under water and filled with stone. The breakwater was also repaired and the planking relaid, from the shore to the warehouse. To the south of the warehouse, some 270 feet in length by 16 feet in width and 5 feet in height was also reconstructed. The west pier has been partially repaired, some 200 feet long by 16 feet wide and 6 feet in height.

Total expenditure for fiscal year 1905-6, \$5,005.11.

PORT ROWAN.

Port Rowan is situated in the county of Norfolk, on the north shore of Lake Erie, in the inner bay of Long Point, and is twenty-one miles south of the town of Simcoe. Population, about 800. Considerable fishing is done from this point; it is a favourite summer resort, owing partly to the fact that it ranks as one of the best bass fishing places in the country.

On July 11, 1905, authority was given to expend the sum of \$500 for the removal by day labour, of sunken logs in harbour.

Work was commenced on August 7 and completed on September 8, 1905, on which date the appropriation was expended.

At the last session of parliament the sum of \$2,000 was appropriated for repairs to wharf, and, on July 26, 1905, authority was given to proceed with the work, by day labour; further authority was subsequently given for an additional expenditure of \$82.50, for the construction of a culvert.

Orders being received to delay repairs until the coming winter, work was not commenced until December 5, and was completed on May 31, 1906; it consisted of the construction of a culvert, 10 feet wide, through stone approach to pier, with the building of necessary decking over same; the repairing of about 400 feet of the north side of approach, at outer end, which had suffered from scouring by wave action; general repairs of the whole 520 feet of wharf, which included renewal of stringers for most of openings in wharf, the renewal of the portion of face-timbers and considerable part of decking, the placing of four pile bents in middle of opening, to carry new stringers, the renewal of sheathing on outer end of wharf and other minor repairs.

The total expenditure during the fiscal year 1905-6 is, \$2,582.50.

PORT STANLEY.

Port Stanley is an important harbour of refuge, situated on the north shore of Lake Erie, at the mouth of Kettle creek, in the county of Elgin, eight and a half miles, by rail, south of the city of St. Thomas. It is the terminus of the Père Marquette Railway.

SESSIONAL PAPER No. 19

A coal ferry, owned by the Lake Erie Coal Company, of Walkerville, carrying thirty cars of one hundred thousand pounds capacity, plies between this port and Conneaut, Ohio, making on an average two round trips every thirty hours.

During the last fiscal year, over 345,000 tons of coal were brought in at this port, as well as a large amount of steel and miscellaneous matter. It will thus be seen that as a revenue port it is of great importance.

Considerable fishing is done from this port, six tugs and other small crafts being engaged in this occupation.

It is also a favourite summer resort. Population about 750. It is a regular port of call for the Merchants' Line of steamers from Montreal. An elevator with a capacity of about thirty thousand bushels has lately been constructed by the John Campbell Company, Limited, of St. Thomas, for the purpose of bringing in grain direct from Fort William. The surrounding country is very rich in farming produce.

At the last session of parliament, the sum of \$70,000 was appropriated for harbour improvements, and on July 26, 1905, authority was given to expend the sum of \$4,400 for the completion of 203 feet of sheath piling in inner harbour and general repairs to piers. Operations were commenced on August 1, 1905.

On February 6, 1906, authority was given to expend an additional sum of \$230 for the replacing of guard piles and repairing other damage done to west pier.

On April 30, 1906, further authority was given for the expenditure of \$400 for general repairs, and, on May 3, 1906, authority was given to expend \$750 in sheet piling and re-enforcing portion of pier on which new elevator has been located.

The works performed consisted of the completion of 203 feet of sheath piling on westerly pier of inner end of harbour to form a revetment wall and necessary filling behind it; the driving of 159 feet of 8-inch sheath piling along inner face of westerly pier; the providing of eight guard piles and other slight general repairs to this pier; also the driving of 75 running feet of 8-inch sheath piling at inner face of easterly pier.

Between July 1 and October 8, 1905, dredging was performed by Mr. C. S. Boone, of Toronto, in channel between piers and in inner harbour.

In the execution of this work some 17,176 cubic yards of clay and sand, 64,954 cubic yards of clay and 5,672 cubic yards of sand were excavated.

The dredging done consisted of excavating to a depth of 18 feet, below low water level, a channel between piers, a turning basin in inner harbour, and a channel along upper end of westerly pier, where, for some years past, owing to the existence of shallow water, it has been impossible to use this portion of pier.

On May 17, 1906, authority was given to continue this dredging, work to be performed by Manley & Co., of Toronto, and at the end of June, 1906, work was still in progress. It consisted in dredging to 20 feet below low water level the entrance to channel, and to 18 feet below low water level, a portion of inner harbour and in turning basin, which was partly filled in with spring freshets.

The turning basin in inner harbour has proved to be of great assistance to the regular line of boats calling at this port; a boat 250 feet long being able to turn quite easily in this basin. During the heavy storms which occurred last fall excellent shelter was afforded in this harbour by the fact that schooners and other large crafts could proceed to the extreme end of inner harbour owing to the dredging just previously performed.

In the execution of this work on the latter contract some 35,433 cubic yards of clay and sand were excavated.

The total quantities thus dredged during the fiscal year amounted to 52,609 cubic yards of clay and sand, 64,954 cubic yards of clay and 5,672 cubic yards of sand.

On July 20, 1905, a contract was let to the Pacific Construction Company, of Ottawa, for the construction of two breakwaters, each 500 feet long. In April, 1906, this contract was transferred to Messrs. Haney & Miller, of Toronto. The amount of this contract being \$105,828.

On June 30, 1906, a large amount of timber, iron and considerable plant were on the site of work, but construction had not been started. The protection which will be

6-7 EDWARD VII., A. 1907

afforded by these breakwaters is badly needed to permit boats entering harbour with safety with heavy sea rolling and to maintain the necessary depth of water at entrance to piers, which, under existing conditions, is continually filling in.

The total expenditure during the fiscal year 1905-6 is \$42,911.12.

RAMA.

Rama is a village on an Indian reserve on the east shore of Lake Couchiching, in the township of Rama, in the county of Ontario, distant 3½ miles northeast of the town of Orillia.

At the last session of parliament, the sum of \$500 was appropriated for the construction of a wharf on Lake Couchiching and on July 26 last authority was given to proceed with the work by day labour.

Work was commenced on August 21, and completed on June 4, and consisted in the construction of a wharf 99 feet in length by 16 feet in width, composed of 3 cribs and 2 spaces.

On January 16 last, authority was given to expend a further sum of \$750 for the completion of this wharf.

In doing the above work, some 11,357 feet b.m. hemlock, 646 feet, b.m., pine, 775 lbs. iron and 5,400 feet b.m. hemlock plank, were used.

Total expenditure for fiscal year, 1905-6, \$499.97.

RICHARD'S LANDING.

Richard's Landing is a small village on the north shore of St. Joseph's Island, in Georgian Bay. It is distant 9 miles by water from Desbarats, the nearest railway point.

On April 24 last authority was given to expend the sum of \$75 for repairs to the wharf.

Work was commenced on June 19 and completed on June 26, and consisted in partially replanking the wharf and placing a waling piece along the entire length of outside wharf, also placing some heavy angle braces and upright posts where required.

In doing the above work some 478 feet, b.m., hemlock, 598 feet, b.m. tamarack, 555 feet, b.m., cedar, 36 feet, b.m., pine and 101 lbs. iron were used.

Total expenditure for fiscal year, 1905-6, \$66.86.

RIVER THAMES.

Jeannette's Creek.

This wharf is located on the south bank of the River Thames, opposite Jeannette's creek in the county of Kent, about 14 miles from the city of Chatham, and about 4 miles from the mouth of the River Thames; it was built for the purpose of serving the surrounding prosperous farming district in assisting them to ship their produce by water and to bring in coal, lumber and other materials. The beet industry is very active in this vicinity, and large quantities no doubt will be shipped from this wharf to the sugar factory at Wallaceburg. A regular line of boats, running from Chatham to Detroit, will call at this point.

Work on the wharf at Jeannette's creek was commenced on November 6, 1905, and, at the end of the fiscal year, was completed, with the exception of a few days' trimming off, and the necessary filling behind concrete wall.

The work performed consisted in the construction of 216 feet of pile foundation, with timber grillage on top, reaching to one foot below low water level, 4 feet wide, and on which concrete wall, 4 feet wide at bottom and 3 feet wide on top, was built to a height of 5 feet above low water level, and securely tied back to anchor piles,

SESSIONAL PAPER No. 19

driven in rear, at intervals of 10 feet. Outer face of work is protected by an 8 x 12-inch oak waling, and 34 feet of sheath piling was driven to serve as a return on lower end of wharf.

The work done is consequently permanent, and should require little or no repairs for some time hence.

The total expenditure during the fiscal year 1905-6 is \$3,085.68.

RIVER THAMES WHARF (LIGHTHOUSE).

At the last session of parliament the sum of \$4,000 was appropriated for construction of a wharf at this point, and on September 8, 1905, authority was given to proceed with this work.

Operations were commenced on April 2, 1906, and work was still in progress at the end of the fiscal year.

The work performed consisted of the construction of 220 feet of pile foundation, with timber grillage on top, reaching to one foot below low water level, 4 feet wide.

The expenditure during the fiscal year amounted to \$871.46.

RONDEAU.

Rondeau is situated on the north shore of Lake Erie, on Pointe aux Pins, about 19 miles south of Chatham and 45 miles west of Port Stanley. It is an important harbour of refuge, and of late years it has become an important summer resort. It is the terminus of the Sarnia and Rondeau branch of the Père Marquette Railway.

In inner harbour and on westerly side along coal dock, a most modern coal handling plant has been established by the Lake Erie Coal Company, which own a coal boat that carries coal regularly to this place from Conneaut, Ohio.

During the last fiscal year, some 216,000 tons of coal were brought in here by this company, and it is anticipated that this amount will be increased during the present fiscal year by at least 150,000 tons, which increase will be partly due to the additional protection afforded to entrance to harbour by the construction of a breakwater pier, now under contract.

At the last session of parliament, the sum of \$70,000 was appropriated for harbour improvements, and on August 4, 1905, authority was given to expend the sum of \$10,000 on repairs to piers and sheath piling. On April 26, 1906, further authority was given to expend the sum of \$1,500 to repair damage done to westerly pier during last spring.

Work was commenced on August 7, 1905, and was carried on more or less continuously until June 30, 1906.

Work performed consisted in renewing of decking of 735 feet of westerly pier, levelling up inner face of same, and placing of 735 feet of 4 x 8-inch oak waling; 880 feet of outer side of westerly pier was sheath piled with double 4 x 12-in. x 26-feet white oak piling, and an additional 79 feet of heavy white pine walings have been placed and securely fastened to pier with suitable drift and screw bolts, to form backing for this additional length of oak sheath piling.

This sheath piling was constructed to stop sand drifting through pier and filling up channel. Other sundry repairs were made to westerly piers. Repairs were also made to outer end of westerly pier and to breakwater, in front of lightkeeper's house.

A contract was let to Messrs. Manley & Co., of Toronto, for dredging, which work was in progress at the beginning of the fiscal year. Between July 1 and November 20, 1905, on which latter date dredge was laid up for winter, dredging was performed in channel in inner harbour and between piers, to a depth of 22 feet below low water level.

On March 24, 1906, authority was given to expend the sum of \$4,000 for further dredging between piers and at outer entrance to channel. This work was authorized in order to permit the coal boat entering harbour, which she could not then do, unless

6-7 EDWARD VII., A. 1907

only half loaded, owing to bars which had formed at entrance to and between piers. This work was commenced on April 11, and was continued until May 16.

On May 17, authority was given to resume this dredging; a contract for same having been let to Mr. C. S. Boone, of Toronto. Work commenced on June 4, and was in progress at the end of June, 1906, and consisted in the opening up of a channel at entrance to harbour, which, during spring storms, had continued to fill up very rapidly.

In the performance of the above dredging, 108,552 cubic yards, scow measurement of clay and sand and 33,150 cubic yards, s.m., of sticky clay were excavated.

On July 14, 1905, contract was let to the Pacific Construction Co. of Ottawa, for the construction of breakwater, 1,000 feet long, at outer entrance to harbour, for the price of \$110,000. On April 6, 1906, this contract was transferred to Messrs. Haney & Miller, of Toronto. At the end of the fiscal year work had not been commenced.

The total expenditure during the fiscal year, 1905-6, are as follows :—

Repairs to piers, &c.	\$ 12,472 27
Dredging	24,220 02
Total	\$ 36,692 29

ROSSEAU.

Rosseau is a summer resort situated at the northerly end of Lake Rosseau, in the district of Muskoka, and is very popular with tourists.

At the last session of parliament, the sum of \$2,000 was appropriated for the construction of a wharf, and on July 26 last authority was given to proceed with the work by day labour.

It was decided, however, to purchase the wharf property belonging to the Anglo-Canadian Leather Company for the sum of \$1,800. Deeds were prepared, duly executed by the company and forwarded to Ottawa on June 22 last.

SAUGEEN RIVER.

Saugeen river empties into Lake Huron at a point about thirty-two miles from Walkerton and about forty-three miles from Sarnia. On this river is situated the thriving town of Southampton, which has a progressive business with three furniture factories, lumber, ties, posts and fishing, besides being a summer resort of note. Considerable traffic is carried on from docks.

At the last session of parliament, the sum of \$20,000 was appropriated for dredging and harbour improvements.

A contract was let to Mr. C. W. Bowman, of Southampton, for dredging of channel entrance to and in harbour to a depth of 18 feet below low water level. Work was in progress on July 1, 1905, and was completed on the 21st of the same month, during which time 14,556½ cubic yards of clay and boulders and hard-pan were excavated.

On July 1, 1905, sheet piling and repairs to south dock were in progress, on which work authority had been previously given to expend the sum of \$2,500. On July 21, 1905, further authority was given to expend an additional \$100 for the completion of these repairs.

Work was completed on September 25, 1905.

The total expenditure during the fiscal year 1905-6 is as follows :—

Repairs to piers, &c.	\$ 211 89
Dredging	24,288 90
Total	\$24,500 79

SESSIONAL PAPER No. 10

SAULT STE. MARIE.

Sault Ste. Marie is situated at the head of St. Mary's river, which connects Lake Superior with Lake Huron.

At the last session of parliament, the sum of \$4,000 was appropriated for the construction of a warehouse, the main part of which is 304 feet by 30 feet with an 'L' 21 feet by 75 feet, on the government wharf; an agreement was entered into with Messrs. Dunlop & Boyd, of this place, on November 10, to construct the warehouse for the sum of \$7,905. Work was commenced on December 1 and is still in progress.

Authority was given on June 27, 1905, and October 25 to expend the sums of \$500 and \$50 respectively, in removal of boulders near the government wharf.

Authority was given on April 9 last, to expend the sum of \$335 in concreting space between warehouses and edge of wharf. Work was commenced on April 12 and completed on May 7.

Total expenditure for fiscal year 1905-6, \$5,852.76.

SEVERN RIVER.

Severn river (McDonald's Chute) is situated not far below Sparrow lake, and consists of a narrow gorge in which the waters were obstructed by a point of rock jutting out into the stream.

At the last session of parliament, the sum of \$500 was appropriated for the removal of the obstruction, and on July 26 last authority was given to proceed with the work by day labour.

Work was commenced on October 11 and completed on December 11, and consisted in removing obstruction of rock and earth from easterly channel leading into and at the head of McDonald's Chute, and removing part of obstruction on the west side of the river at the head of the chute. The portion of rock removed measured 3 feet deep by 46 feet long and 28 feet wide, and the earth 2 feet deep, 8 feet wide and 150 feet long.

Total expenditure for fiscal year 1905-6, \$500.

SILVERWATER.

Silverwater is a small place situated on Bayfield sound, on the north shore of Manitoulin island.

At the last session of parliament, the sum of \$4,500 was appropriated for the construction of a wharf, and on July 26 last authority was given to expend the amount by day labour.

Work was commenced on October 16, and is still in course of construction; it consists in the construction of a stone approach, 86 feet in length, and 102 feet of cribwork, all 20 feet in width and 5 feet above water level. The 80-foot 'L' at outer end is partially constructed.

Total expenditure for fiscal year 1905-6, \$1,420.09.

SHREWSBURY.

Shrewsbury is a small village on the north shore of Rondeau bay, in the county of Kent, about 20 miles southeast of Chatham.

On the 8th January, 1906, authority was given to expend the sum of \$10 for necessary repairs to approach to wharf, which work was performed during the following May.

Total expenditure during fiscal year 1905-6, including labour and materials, \$9.75.

6-7 EDWARD VII., A. 1907

SOUTHAMPTON.

Southampton is an incorporated town situated at the mouth of the Saugeen river, on the east shore of Lake Huron, in the county of Bruce, 32 miles from Walkerton, the county town, and is the terminus of a branch of the Grand Trunk Railway.

On September 12, 1905, authority was given to expend the sum of \$90 for the removal of a boulder in harbour, by day labour. Work was commenced on March 1, and completed on March 25.

SOUTH LANCASTER.

Lancaster is a post village in Glengarry county, on the River St. Lawrence, 16 miles east of Cornwall, and, on the Grand Trunk Railway, 54 miles west of Montreal. Population about 600. South Lancaster is situated $1\frac{1}{2}$ miles south of Lancaster, on the north shore of Lake St. Francis. It is a landing place for Montreal and Cornwall steamboats.

In February, 1901, the construction of a wharf was commenced, and though not completed, opened to traffic in May following. It consists of a pile head block, 84 feet long and 72 feet wide; of a stone embankment 356 feet long to shore by a width of 20 feet at top, with slopes of hand-laid stone inclined 1 in 2 on both sides. A $1\frac{1}{2}$ -inch iron pipe railing on both sides, with cedar posts every 10 feet, and a storehouse and waiting-room erected on head block, complete the structure.

The works carried on by day labour cost, in 1900-1, \$5,013.13, and in 1901-2, \$4,862.77, including the purchase and fencing, adjacent to approach, of a cattle yard, 80 x 150 feet.

In 1903 and 1904, minor repairs and improvements cost \$377.01 and \$98.83, respectively.

In May, 1906, renewal was made of 164 lineal feet of walings, with 8 x 10-inch oak, and of 1,880 square feet of flooring with 3-inch pine deals. The door of storehouse was repaired and some gravel spread on approach.

Expenditure 1905-6 was \$295.07.

ST. JOSEPH.

St. Joseph is situated on the east shore of Lake Huron, about 14 miles south of Goderich. Population about 100.

During the session of parliament, 1902, the sum of \$5,000 was appropriated towards buildings a wharf at this place. The wharf was partly constructed by day labour, when a contract was let in 1903, for the completion of same, to Mr. J. A. Corry, of Ottawa, for the price of \$3,950.50.

At the beginning of the last fiscal year only a portion of the work was built, and on October 16, 1905, a large crib was placed and almost immediately destroyed by heavy storm, when other damage was also done. Work was then practically suspended until last spring.

Very bad luck has been experienced in the placing of the outer cribs of this work, which partly accounts for the fact that the work is not yet finished.

Considerable difficulty is found in building stone approach, owing to the heavy force of the waves at this point washing off any but stone of very large size.

It is estimated that about one month further will complete this work.

Expenditure during the fiscal year 1905-6, \$569.75.

TENBY BAY.

Tenby Bay is a farming settlement on the south shore of St. Joseph's island, Lake Huron.

As this work, which consisted in the construction of a wharf, 245 feet in length, composed of a stone approach 145 feet in length by 18 feet in width, and pile wharf

SESSIONAL PAPER No. 19

100 feet in length, with block end, 35 x 50 feet, was not completed on the June 30, 1905, the work was continued through July, when same was completed.

Total expenditure for fiscal year 1905-6, \$711.68.

THESSALON.

Thessalon is situated on the north shore of the north channel of Lake Huron, in the district of Algoma, 50 miles east of Sault Ste. Marie. Considerable lumber is shipped from this place.

At the last session of parliament, the sum of \$2,100 was appropriated for the construction of a warehouse on the new government wharf, and on November 18 authority was given to proceed with the work by day labour.

Work was commenced on November 27, and completed on April 30, and consists in the construction of a warehouse 30 feet wide by 72 feet long, on cribwork foundation.

On April 7 last authority was given to expend a further sum of \$200 for completion of warehouse.

On July 14, 1904, a contract was let to Messrs. O'Boyle Bros., for the sum of \$19,000, to construct a breakwater 420 feet in length with an 'L' of 80 feet at the outer end made up as follows: 80 feet of stone approach, 340 feet of cribwork, 20 feet in width, and an 'L' 80 feet in length by 25 feet in width. This work was commenced on August 20, 1904, and completed on August 1, 1905.

Total expenditure for fiscal year 1905-6, \$4,617.26.

THORAH ISLAND.

Thorah Island is situated in Lake Simcoe, three miles from Beaverton, the nearest railway point.

At the last session of parliament, the sum of \$300 was appropriated for completion of wharf, and on August 2, authority was given to proceed with the work by day labour.

Work was commenced on October 16, and consists in the completion of 28 feet of piling, on the north side of the channel, with 38 feet of cribwork, and on the south side, 27 feet of piling with 20 feet of cribwork. The channel is 45 feet in width. Work was completed on October 31.

Total expenditure for fiscal year 1905-6, \$94.10.

THORNBURY.

Thornbury, an incorporated town in Grey county, is situated at the mouth of the Beaver river, which empties into Georgian bay, and is on the Meaford branch of the Grand Trunk railway, eight miles from Meaford and fourteen miles from Collingwood. Population 1,000.

At the last session of parliament, the sum of \$1,000 was appropriated for repairs to the breakwater on the east side of harbour, and on July 26 last authority was given to proceed with the repairs by day labour. Work was commenced on September 1, and completed on May 1 last; it consisted in renewing those portions of the structure which were decayed or wrecked.

In doing the above work some 802 pounds iron and 8,321 f.b.m cedar were used.

Total expenditure for fiscal year 1905-6, \$1,000.08.

TORONTO.

Toronto harbour is situated on the north shore of Lake Ontario, and is formed by a circular bay $1\frac{1}{2}$ miles in diameter, separated from the lake by a large island (formerly a peninsula) about six miles long, making a safe, well sheltered harbour for containing a large number of vessels.

6-7 EDWARD VII., A. 1907

At the last session of parliament the sum of \$28,000 was appropriated for works at eastern channel, and authority was given on July 28 to expend this amount by day labour.

Work was commenced on July 29 and completed on June 30, and consisted in the construction of 1,464 feet of sheet piling along channel side of east pier.

Authority was given on September 15 last to expend the sum of \$10,000 in the construction of 1,000 feet of pile protection work at the western end of the island breakwater. Work was commenced on September 18, and completed December 7.

At the last session of parliament, the sum of \$60,000 was appropriated for the construction of an extension to the breakwater, and plans and specification were prepared and a contract let on September 5 to Messrs. Haney & Miller for the sum of \$49,000 for the construction of an extension 1,500 feet in length. Up to date the work has not been commenced.

A lighthouse was built for the Department of Marine and Fisheries on the north end of the east pier, eastern channel.

Work was commenced on November 20 and completed on March 31.

The government dredge *Montagus* started work on the bar south of east pier on June 8, and is still working there. Up to date the dredge worked 43½ hours, removing 1,150 cubic yards.

On May 11 last an agreement was entered into with Mr. M. J. Haney for the dredging at the eastern entrance. Work was commenced on June 22, and is still in progress. Up to date the dredge worked 26½ hours, removing 481 cubic yards of material.

Total expenditure for fiscal year 1905-6, \$6,527.27.

TREADWELL.

Treadwell is a post village in Prescott county, on the south shore of River Ottawa, 4 miles north of Plantagenet, on the Canadian Pacific Railway, 41 miles east of Ottawa.

The old Cane and Brown wharfs in this locality, being in a very dilapidated condition, and the proprietors reluctant to undertake the expensive repairs found necessary to accommodate the heavy traffic from Plantagenet and surrounding parishes, the government decided to build a new wharf. To this effect, Brown's wharf, including a 20-foot wide and 250-foot long right of way, was bought for the sum of \$600.

Work on the wharf proper was commenced in May, 1905. It consists of a head block, 33 feet wide and 116 feet long at top, formed by a double row of close-faced and stone filled cribs, 133 feet 6 inches long, 10 feet wide and 17 feet clear apart, standing 1 foot above low level, the outside face of outer crib being sunk in 9 feet 6 inches of water. On each row rests a superstructure, 10½ feet high, with an icebreaker of granolithic concrete mixed 1:3:5. The outer wall has a width of 6 feet 1½ inches at bottom and 1 foot 9 inches at top, the outside face being inclined 1 in 12 and the inside face 1 in 3. The inner wall is 5 feet and 1 foot 9 inches wide at bottom and top respectively, and has faces inclined 1 in 12 and 1 in 5. The front wall is reinforced every 10 feet by 1½-inch vertical iron bars, with plates, inserted in the concrete near the outer face. The top of said wall is anchored with the bottom of rear wall by four 1½-inch iron bars 32 feet long. A double slip, each 10 feet wide and at elevations of 3½ and 7 feet from low water, were made in the face.

The approach, 123½ feet long, is built of stone, and measures 18 feet wide at top, with sides riprapped and sloped 1 in 2.

During May and June, 1905, materials, including stone, lumber, sand, iron bars and steel floor, was procured. At the end of June, the roadway was about four-fifths completed. The expenditure during 1904-5 was \$5,074.76.

In July and August last, the cribs were built and sunk in place. The concrete superstructure was commenced in September and completed at the end of November.

Expenditure during 1905-6 was \$3,599.63.

SESSIONAL PAPER No. 19

PROVINCE OF MANITOBA.

GIMLI.

A portion of the Gimli wharf was filled in with stone ballast, and general repairs to the wharf were made, at a cost of \$2,991.82.

LAKE FRANCIS OUTLET.

During the year, 200 lineal feet of protection piling at Lake Francis were completed at a cost of \$2,103.54.

SELKIRK WHARF.

Two slips were built in the Selkirk wharf for the accommodation of the shipping of West Selkirk.

Total expenditure during fiscal year 1905-6 was \$1,324.

NORTHWEST TERRITORIES.

CRAVEN DAM—LAST MOUNTAIN LAKE.

A pier and timber dam was built during the winter below the outlet of Last Mountain lake, on the Qu'Appelle river. The purpose of this dam is to regulate the flow of Last Mountain Lake.

The expenditure during 1905-6 was \$1,093.72.

BRITISH COLUMBIA.

ANDERSON AND KENNEDY LAKES.

The work in connection with the improvement to the outlets of the above lakes is about completed, that on the former lake entirely so, and a couple of months' work will complete that of the latter, until such time as a greater development of the mining interests call for increased facilities in getting up boats and supplies without breaking bulk.

The expenditure in connection with the above service has been as follows :—

Anderson Lake—

Wages.....	\$ 901 00
Material..	42 83
Provisions..	223 35
Boat-hire..	27 00
	<hr/>
	\$1,194 18

Kennedy Lake—

Wages.....	\$ 889 75
Material..	134 94
Provisions..	218 86
	<hr/>
	\$1,243 55

Total \$2,437 73

CAMPBELL RIVER WHARF (VANCOUVER ISLAND).

As the appropriation was inadequate for the construction of this wharf, which was estimated to cost \$5,000, the appropriation was expended for material such as piles,

6-7 EDWARD VII., A. 1907

lumber, &c., all of which is on hand, and the work of building and completing the wharf will be done this fall under a further appropriation of \$3,000 appearing in the estimates for 1906-7.

The expenditure has been as follows : Material, \$2,440.94.

CHILLIWACK WHARF.

This wharf, at the practical head of steamboat navigation since the completion of the Canadian Pacific Railway, is on the left bank of the Fraser river and forty-eight miles above New Westminster. It is, in consequence, a somewhat more ambitious structure than those erected at less important points, with a warehouse, 50 feet x 35 feet, having a lean-to as a protection to teams unloading and receiving freight during the wet weather, and a corral and loading chute for cattle, pigs, &c.

The wharf proper was practically finished last year, but with the additional \$1,000 we were enabled to put up the addition of the lean-to, corral and loading chute, making the entire work complete.

The expenditure has been as follows :—

Wages.....	\$525 75
Material.....	401 18
Team-hire.....	50 00
Contingencies.....	12 05
Total.....	\$988 98

COLUMBIA RIVER, ABOVE GOLDEN.

This service represents the work of the department's tug boat *Muskrat* in the construction of new dams and the repairing and extending of existing works, with a view to obtain a navigable depth of water over the various bars, &c., on this portion of the Columbia river. The results have been satisfactory as the different steamers now run during the entire period of navigation, or until the closing of the river by ice. During the winter months the crew of the *Muskrat* is, as a rule, engaged in getting out material, such as piles, rock and brush for the next season's work, which is found to be the most economical way of procuring it. The work will be continued in keeping with the appropriation, which is only designed to cover the expense of operation and maintenance of the *Muskrat*.

The expenditure has been as follows :—

Wages.....	\$1,652 99
Material.....	986 39
Provisions.....	351 96
Total.....	\$2,990 96

COLUMBIA RIVER, BELOW GOLDEN.

This work consists of the erection of pile and crib dams, 250 and 770 feet in length, across the mouths of three subsidiary channels, a short distance above Donald, and some 18 miles below Golden, for the purpose of preventing logs from entering these channels during high water and stranding at the lower end. These dams are well and substantially built, and likely to prove fairly permanent and effective.

The expenditure has been as follows:—

Wages.....	\$1,774 06
Material.....	844 19
Provisions.....	356 17
Total.....	\$2,974 42

SESSIONAL PAPER No. 19

COLUMBIA RIVER, ABOVE REVELSTOKE.

The work on this service has been confined to the canyon immediately above Revelstoke, and the appropriation was expended prior to December 31, 1905. The securing of navigation through this canyon at all stages of the water will obviate the haulage of freight and passengers some 8 miles to the head of canyon, which point, during the greater part of the season of navigation, the steamer *City of Revelstoke* makes her point of departure for up river to Downie creek, some 50 miles, at the foot of Death's rapids, the present head of navigation on this portion of the river. It is expected that another season's operation will practically complete our work on this portion of the Columbia river.

The expenditure has been as follows:—

Wages.	\$2,933 33
Material.	1,332 30
Provisions.	685 76
Total.	\$4,951 39

COLUMBIA RIVER, AT ARROWHEAD.

The work at this point consisted of filling in with brush and stone and repairing wing dam built in 1904-5. The repairs, etc., and securing shore connections, were done under the superintendence of Captain Bacher, of the dredge *Nakusp*, during the time the dredge was laid up at Arrowhead, and, as far as I could judge, my inspection, owing to the stage of the water, being somewhat imperfect, appeared to be well done and made secure.

The expenditure has been as follows:—

Wages.	\$2,212 00
Material.	1,031 18
Provisions.	201 65
Tug-hire.	683 50
Total.	\$4,128 33

COLUMBIA RIVER, GENERALLY (AT REVELSTOKE).

A full description of this work has been given in previous reports but, briefly, it consists of a diversion of the Columbia River at Revelstoke through a former and filled in channel, in lieu of further mattress protection, which has proved effective, by means of a dam and the opening of the channel referred to, to induce the flow of the current in that direction and save further erosion of the high and friable bank, that forms the river face of valuable city property below our dam. This dam has not as yet been carried entirely across the river as this could not be done until such time as an opening had been made through the bar, for the passage of the water at its highest stage. By means of the dredge *Nakusp* and teams and scrapers, a channel was opened some 2,000 feet in length, 1,000 feet, 90 feet wide, and from 6 to 9 feet deep at low water, by the dredge, and some 900 feet, to low water level, by teams and scrapers. With the rise in the water and a diversion of a large portion of the current, this channel has cut from a width of 30 feet to over 100 feet. Should this scour continue, as it no doubt will, during the high water stage, a material saving will be effected, as was anticipated, in the expense of excavation.

There is only, as yet, 600 feet of dam completed, leaving 450 feet yet to be done to close the river, and a possible protection from scour along the right or eastern

6-7 EDWARD VII., A. 1907

bank of new channel. The dam is substantially built with its crest 8 feet above extreme low water. If, as I hope, this dam, together with the new channel, meets my expectations the erosion of valuable property will be stopped.

The expenditure has been as follows :—

Wages.. . . .	\$ 8,382 70
Material.. . . .	2,504 72
Provisions.. . . .	1,040 35
Team hire.. . . .	2,693 75
Fuel.. . . .	183 22

Total.. . . .	\$ 14,804 74
---------------	--------------

COQUITLAM RIVER.

This small appropriation has been expended in clearing the river and closing the mouths of lateral sloughs by booms, to confine the drive of logs to the main channel.

A large quantity of logs, shingle bolts, &c., are brought down annually and our improvements to the river have been appreciated.

The expenditure has been as follows :—

Wages.. . . .	\$ 377 09
Material.. . . .	554 12

Total.. . . .	\$ 931 21
---------------	-----------

COURTNEY RIVER (VANCOUVER ISLAND).

This is entirely a work of protection to prevent further erosion of the banks and consequent destruction of the roadway, which also constitutes the dyke to a large area of valuable property. The work consists of a pile and crib protection at the most exposed points, but, to be thoroughly effective, it should be made continuous. For this purpose a further appropriation has been asked and appears in the estimates for 1906-7. The work will be done this fall.

The expenditure on this service during the past fiscal year has been as follows:

Wages.. . . .	\$1,766 55
Material.. . . .	2,109 32
Team-hire.. . . .	957 00

Total.. . . .	\$4,832 87
---------------	------------

DUNCAN RIVER.

The expenditure on this service has now continued for a number of years without, as far as I can see, any cause to continue it. Navigation has practically ceased since the construction of the railway. The work has consisted in clearing the banks of sweepers or overhanging trees and removing the stumps of those of the preceding year that are washed into the channel by the erosion of the banks. It is a question whether this annual clearing of the banks is not causing more trouble than to allow the trees, as they sometimes do, to form an abattis or protection of themselves.

SESSIONAL PAPER No. 19

The expenditure has been as follows:—

Wages.....	\$1,481 00
Material.....	80 15
Provisions.....	288 76
Boat-hire.....	96 00
<hr/>	
Total.....	\$1,945 91
<hr/>	

FRASER RIVER IMPROVEMENT.

In my various reports on this important service for the past two years, considerable stress has been laid on the necessity for definite action under the somewhat comprehensive term of 'the conservancy of the Fraser river,' with a view to establish a ship channel of uniform depth between the city of New Westminster and the strait of Georgia, a distance of 20 miles.

The work, during the past year under the head of Fraser River Improvement, has been the completion of a series of dams, four in number, across the sloughs on Nicomen island. The high water of this year was so much below the normal as to give but an imperfect test, but the residents state that there is no question as to their marked benefit.

The expenditure in connection with this service has been as follows:—

Wages.....	\$7,020 41
Provisions.....	1,907 64
Material.....	3,122 12
Team-hire.....	5,319 42
Tide gauges.....	455 00
Superintendence.....	1,540 70
<hr/>	
	\$19,365 29
Dredge <i>King Edward</i>	\$4,393 47
Snag boat <i>Samson</i>	1,240 30
<hr/>	
	5,633 77
<hr/>	
Total.....	\$24,999 06
<hr/>	

KOOTENAY RIVER AT PROCTER.

This work, at the point where the Kootenay river leaves Kootenay lake, some twenty miles above the city of Nelson, was done at the request of the Canadian Pacific Railway Company, and consisted of removing a number of boulders from the channel which were a menace to navigation during the period of low water. The work was done during the winter months, or between December 13, 1905, and January 31, 1906. A large number of boulders were removed from the steamboat channel and dropped into deep water. To make the entrance from the lake into the river fairly safe at any stage of water, a further sum of \$2,500 will be required.

The service must not be confounded with the one for that portion of the Kootenay river, constituting the inlet into Kootenay lake, at its southern extremity, for which an appropriation of \$2,000 appears in the supplementary estimates for 1906-7.

6-7 EDWARD VII., A. 1907

The expenditure on the work at Procter has been as follows :

Wages.....	\$1,406 00
Material.....	461 20
Tug hire.....	200 00
Pile driver.....	430 00
Total.....	<u>\$2,497 20</u>

LANGLEY WHARF (FRASER RIVER).

This wharf, at the town of Langley, on the left or south bank of the Fraser river, and seventeen miles above New Westminster, was built during the fiscal year 1904-5, but a warehouse, 25 feet x 40 feet, was erected during the past year and a pile protection extended along the bank, 1,125 feet above and some 500 feet below, in all, 1,675 feet.

The purpose of this protection was to save the public road along the bank from further erosion, from which it had suffered.

The expenditure has been as follows:—

Wages.....	\$2,020 84
Provisions.....	458 37
Material.....	2,629 37
Total.....	<u>\$5,108 58</u>

MISSION CITY WHARF.

This wharf is also similar to the one built at Whonnock, is on the right bank of the Fraser river, thirty miles above New Westminster. It has been built at an expenditure of which the following are the details:—

Wages.....	\$980 44
Provisions.....	279 65
Material.....	1,116 42
Total.....	<u>\$2,376 51</u>

NORTH THOMPSON RIVER.

Until March 16 of the present year, this appropriation had remained practically intact. On that date the excavation below the dam closing the channel was commenced. The bar was removed and an opening of some 60 feet made in the dam. Before the removal of this bar there was a drop of about 8 feet in a distance of less than one hundred feet. Now the drop is a uniform grade extending over a distance of 800 feet, with a depth of not less than 3 feet at any point, so that there should not be any difficulty in taking a boat drawing 2½ feet over the rapids, at any stage of water.

This excavation of the bar was done by means of a Stanley scraper, and, notwithstanding that a large part of the material moved consisted of large boulders and cobble stones, it was found to do most excellent work, and solved the difficulty of doing this class of work where a dredge is not obtainable.

SESSIONAL PAPER No. 19

The expenditure has been as follows :—

Wages.	\$ 1,828 71
Material.	2,055 73
Provisions.	334 39
Team hire.	633 50
Total.	<u>\$ 4,852 33</u>

PORT HAMMOND WHARF (FRASER RIVER).

This wharf, on the north side or right bank of the Fraser river and some 12 miles above New Westminster, is one of a number constructed between New Westminster and Chilliwack, for the accomodation of the settlers in shipping produce, &c., on the different steamers plying on this route. One description will suffice for all. They consist of a 'T' varying from 70 feet to 100 feet by 40 feet, upon which is erected a small warehouse about 35 feet x 20 feet. The cost varies according to the length of approach, running from \$2,500 to \$3,000 each.

The expenditure in the completion of the above wharf is as follows :—

Wages.	\$ 911 32
Provisions.	271 50
Material.	1,415 96
Tug hire.	65 00
Total	<u>\$2,663 78</u>

SALMON RIVER.

This appropriation was only considered as a provision for possible work required this year, after its practical completion last year, and to meet a small deficit, the payment of which left a balance of some \$950 available. Some little work of clearing the stream was required, and was deputed to the manager of the Columbia River Lumber Co., whose logs were in the stream, to disburse to the best advantage. To have organized and outfitted a party for this purpose meant that most of the appropriation would have been expended before any work could have been done. The community benefited to the same extent with the Lumber Co., in charge as if the latter means had been adopted, with a much better result in the account of the work done.

The expenditure was as follows :—

Wages.	\$ 718 65
Material.	42 73
Provisions.	194 58
Team hire.	37 50
Total.	<u>\$ 993 46</u>

SKEENA RIVER.

The work on this river for the past year has been confined to clearing it of snags, &c., on its lower reaches, in the interests of the fishing industry, which is gradually increasing in extent. Our present snag scow has only a limited capacity for this kind of work and does not fill the requirements as fully as desired. The completion of the new snag boat, now under construction at New Westminster, will obviate this difficulty and, with but little additional expense, give a very much more effective and satisfactory service.

6-7 EDWARD VII., A. 1907

The improvement of the river between Kitsilas canyon and Hazleton, some 80 miles, will, according to late reports, need attention. Considerable work has been done on this portion of the river, to the material improvement of navigation, by the removal of boulders, &c., obstructing the channel at low water. Under the appropriation for 1906-7 this work will be attended to. In all probability, with the construction of the Grand Trunk Pacific, with Hazleton as a distributing point, the traffic on the Skeena river will in the near future be very much in excess of what it has been in the past.

The expenditure for the past year has been as follows:—

Wages.. . . .	\$2,527 22
Material.. . . .	617 96
Provisions.. . . .	716 99
Fuel.. . . .	200 00
Total.. . . .	<hr/> \$4,062 17 <hr/>

SPALLUMCHEEN.

The expenditure on this service represents only the payment of an account for work done by the Columbia Flouring Mills Company at Enderby previous to the work done by this department:—

Wages.. . . .	\$136 00
Material.. . . .	242 35
Total.. . . .	<hr/> \$378 35 <hr/>

WHONNOCK WHARF.

This wharf, on the right bank of the Fraser river, and twenty-one miles above New Westminster, is similar in design to that of Port Hammond, and represents an expenditure as follows:—

Wages.. . . .	\$ 844 56
Provisions.. . . .	261 46
Material.. . . .	1,581 49
Total.. . . .	<hr/> \$2,687 51 <hr/>

WILLIAM'S HEAD.

Quarantine Station.

The work on this service consisted of the enlargement of the disinfecting station, in which a large quantity of rock had to be handled and requiring great care in its removal to avoid damage to the existing building; a complete re-arrangement of tracks for greater facility in handling and passing passengers through the station; and renewing a number of brace piles and a large area of the superstructure of the wharf that was found unsafe. This work was practically all done in the fall of 1905. The small balance remaining was used in repairing the Muntz metal sheathing piles that had been damaged by drift wood. Advantage was taken of the very low tides during the month of June to effect these repairs, which have been thoroughly done, or wherever it was possible to reach the damaged portion.

SESSIONAL PAPER No. 19

The expenditure has been as follows:—

Wages.. . . .	\$6,051 00
Material.. . . .	3,857 17
Total.. . . .	<u>\$9,908 17</u>

YAKOUN RIVER (GRAHAM ISLAND).

Graham island is the most northerly of the islands forming the Queen Charlotte group, lying between the 52nd and 54th degrees of north latitude and off the extreme north coast of the mainland of British Columbia, from which it is divided by the waters of Hecate strait, at this point from 80 to 100 miles in width.

The work of improvement to the navigation of this river is in the interests of the valuable coal and timber limits in the interior and near the southern end of the island, in which the Yakoun river has its source, running thence north into Masset bay. It was supposed that this river, for a certain portion of its length, could be made navigable for small stern-wheelers of light draft. This, on examination, was found impracticable, and I only recommended an expenditure sufficient to clear out the many formidable log jams to admit of the passage of large canoes or boats of two or more tons, to give easy access by water for supplies or light machinery with less trouble than by a trail of some 7 or 8 miles from Skidegate, a point of occasional call at the southern extremity of the island.

Arrangements were made for the commencement of this work last fall, but the weather turned so exceptionally stormy that we were unable to convey the men and material across the strait, and the work was abandoned to be resumed and completed this spring.

The expenditure has been as follows:—

Wages.. . . .	\$1,164 83
Provisions.. . . .	283 45
Material.. . . .	513 62
Steamer hire.. . . .	506 00
Total.. . . .	<u>\$2,467 90</u>

DREDGING OPERATIONS.

During the fiscal year 1905-06, dredging was done in the following places:—

PROVINCE OF NOVA SCOTIA.

Lockeport harbour, Shelburne county.
Mahone Bay harbour, Lunenburg county.
Mabou harbour, Inverness county.
Mabou bar, Inverness county.
Mabou government wharf, Inverness county.
North Sydney, Ingraham wharf, Cape Breton county.
North Sydney, Salter's wharf, Cape Breton county.
Pictou, Market wharf, Pictou county.
Pictou, Railway wharf, Pictou county.
Shelburne, Shelburne harbour, Shelburne county.
Yarmouth, Yarmouth harbour, Yarmouth county.

PROVINCE OF NEW BRUNSWICK.

Campbellton harbour, Restigouche county.
Cedar's wharf, King's county.
Dalhousie harbour wharf, Restigouche county.
Dalhousie railway wharf, Restigouche county.
Dalhousie ferry landing slip, Restigouche county.
Dalhousie Lumber Company wharf, Restigouche county.
Glenwood wharf, King's county.
Intercolonial Railway wharf (N.R.C. slip), St. John county.
Jenkin's cove (Belleisle) wharf, King's county.
Partridge island landing piers, St. John county.
Shamper's wharf, King's county.
Shippegan harbour, Gloucester county.
St. Andrew's harbour, Charlotte county.
Spoon Island, Mooney's wharf, Queen's county.
Traverse channel, Restigouche county.
West channel (Water Pipe Trench), St. John city and county.
Winter port berths, St. John city, St. John county.

PROVINCE OF PRINCE EDWARD ISLAND.

Carvell Bros. wharf, Queen's county.
Charlottetown, Geo. Full's wharf, Queen's county.
Charlottetown, Peake Bros. wharf, Queen's county.
Charlottetown, Arthur Peake's wharf, Queen's county.
Charlottetown, Pownal & Plant wharf, Queen's county.
Charlottetown, Prince Edward Island Railway wharf, Queen's county.
Murray river piers, King's county.
Wood island channel, Queen's county.

SESSIONAL PAPER No. 19

PROVINCE OF NOVA SCOTIA.

Dredging at Lockeport harbour channel, Shelburne county—Lockeport, Shelburne county, is situated on the Atlantic coast about fourteen miles southeast of Shelburne, and has a population of about 800. It has been and is one of the most important centres of the fishing industry.

During the fiscal year 1905-6, the dredge *Canada* was engaged from July 1 to the 15th and August 15 to September 29, 1905, improving the harbour channel from the light inward to a depth of 13 feet, by removing 13,770 cubic yards of mud, &c., at a cost of 22.23 cents per cubic yard.

DREDGING AT MAHONE BAY.

A seaport town in Lunenburg county, seven miles east from Lunenburg. Here some of the finest fishing and coasting vessels have been built. Several churches, a good hotel, several stores, post office, telegraphs and telephones are here; also good farms, and the fisheries are given considerable attention.

During the fiscal year, the dredge *Canada* was engaged from September 30 to December 22, 1905, and from April 19 to June 22, 1906, improving the harbour channel to a depth of 13 feet by removing 36,175 cubic yards of mud at a cost of 25.26 cents per cubic yard, and at the last mentioned date was under orders for work at Windsor, Hants county, on the Avon river.

DREDGING AT MABOU INVERNESS COUNTY.

Mabou.—The country along the river is exceedingly fertile, and the scenery at the mouth of the harbour is very beautiful. Vessels of heavy tonnage find good anchorage in Mabou harbour, on the Gulf of St. Lawrence, which is 10 miles north-east of Port Hood.

The dredge *Cape Breton* was engaged here from July 6 to October 3, and November 7 to 15, in improving the depth of water on the bar at the entrance and the channel inside, removing 59,430 cubic yards of sand and gravel at a cost of 14.43 cents per cubic yard, and from October 4 to November 6 and November 16 to 22, in opening a channel from the harbour to the new wharf at the bridge leading to the village, by removing 47,565 cubic yards of mud, sand and gravel, at a cost of 7.29 cents per cubic yard. The dredge *Geo. McKenzie* resumed work at the bar on May 13, and was continuing it at the close of the fiscal year, having removed a further quantity of 4,432 cubic yards of sand and gravel at a cost of \$1.04.13 per cubic yard. The cost of removing the dredge from Shippegan, Gloucester county, N.B., to Mabou is included in this, making the cost appear high for the time used and work done.

DREDGING AT NORTH SYDNEY.

The dredge *Cape Breton* was engaged on July 3, 1905, at Ingraham's wharf at North Sydney removing 315 cubic yards of mud and stone, at a cost of 30.20 cents per cubic yard, and on July 4 and 5, at Salter's wharf, removing 1,260 cubic yards of sand and gravel, at a cost of 9.66 cents per cubic yard.

DREDGING AT PICTOU.

The dredge *St. Lawrence* was engaged from the 22nd to the 26th of November in improving the channel from the harbour channel to the market wharf, by removing 1,400 cubic yards of mud, at a cost of 25.24 cents per yard; and from the 27th of November to the 12th of December at the railway wharf, removing 3,850 cubic yards of mud, at a cost of 34.23 cents per cubic yard. The dredge *Cape Breton* was also engaged from the 19th of May to the 19th of June, 1906, at the railway wharfs, removing 18,200 cubic yards of mud, at a cost of 28 cents per cubic yard.

6-7 EDWARD VII., A. 1907

DREDGING AT SHELBURNE.

A seaport town of Nova Scotia, capital of the county of Shelburne, on the north-east arm of a capacious harbour, 160 miles southwest of Halifax. This harbour is regarded as the best in Nova Scotia. On the southeast point of McNutt's island, at its entrance, stands a lighthouse, exhibiting two lights. Shelburne is a place of considerable trade, and has excellent facilities for the repairing and furnishing of vessels. It contains iron works, several hotels and a number of stores. Population about 1,000.

During the fiscal year, the dredge *Canada* was engaged from the 16th of July to the 14th of August in improving the depth of water near the wharfs in the harbour, removing 1,800 yards of mud and stone, at a cost of 75:12 cents per cubic yard.

DREDGING AT YARMOUTH.

Yarmouth, a seaport town of Nova Scotia, capital of Yarmouth county, on a small bay 205 miles southwest of Halifax, and 88 miles from Annapolis. The surrounding country is fertile and well cultivated. The town contains many fine public buildings, a custom house, post office, court house, churches, educational institutions, banks, hotels and private residences. The Yarmouth Seminary is one of the largest and handsomest wooden buildings in the province. There is also a commercial reading-room and two printing offices issuing weekly newspapers, many fine stores, manufactories of iron castings, machinery and boilers, and has a large trade in lumber and fisheries. It is a port of entry, and is the southern terminus of the Dominion Atlantic Railway, connecting it with Halifax, and a number of fine ocean steamers connecting with Boston.

A large amount of dredging has been performed in past years in the harbour of Yarmouth, and during the fiscal year the new dredge *W. S. Fielding* operated there from the 20th of October to the 30th of December, and the 9th of April to the 30th of June, improving the depth of channel to 18 feet at low water, by removing 83,440 cubic yards of mud, sand and gravel, at a cost of 19:12 cents per cubic yard.

PROVINCE OF NEW BRUNSWICK.

DREDGING AT CAMPBELLTON.

Campbellton, an incorporated town on the southern side of the Restigouche river, in the County of Restigouche, of about 3,000 inhabitants, is directly opposite Cross Point in Bonaventure county, Province of Quebec, about 14 miles above Dalhousie, the shire town of the county. Spring tides rise 11 feet.

The dredge *St. Lawrence* was engaged dredging at Campbellton from the 3rd to the 25th of July, and working extra time removing 9,800 cubic yards of mud and gravel at a cost of 23 cents per cubic yard.

DREDGING AT THE CEDARS.

The dredge *New Brunswick* was engaged at the Cedar's wharf, St. John river, from the 9th to the 15th of November, 1905, and from the 6th to the 30th of June, 1906, improving the depth of water there, by removing 15,750 cubic yards of mud and gravel at a cost of 8:17 cents per yard.

DREDGING AT DALHOUSIE.

Dalhousie, a port of entry, capital of Restigouche county, on the Restigouche river, at its entrance into the Baie des Chaleurs, 284 miles north of St. John, and 126 miles south-east of St. Flavie, on the St. Lawrence. In front of the town is a well sheltered cove, with good holding ground for ships in nine fathoms of water. Fine

SESSIONAL PAPER No. 19

wharfs have been constructed here, affording conveniences for loading the largest ships. A large trade is done in Dalhousie in salmon and lobster fisheries. It has several churches and stores, and a branch of the Intercolonial Railway is here, and the shipping of lumber is extensive.

The dredge *St. Lawrence* was engaged from the 4th to the 24th of August, removing 13,336 cubic yards of mud and gravel, preparing for new wharf, &c., at a cost of 13·69 cents per cubic yard. From September 7 to October 15 improving the ferry landing, by removing 12,992 cubic yards of mud, sand and gravel at a cost of 27·95 cents per yard; from August 25 to September 6 improving in front the I. C. Railway wharf, by removing 8,460 cubic yards of mud, &c., at a cost of 14·22 cents per yard; from the 16th to the 20th and the 24th to the 25th of October, dredging was performed at the Dalhousie Lumber Company's wharf, removing 3,860 cubic yards of mud, sand and gravel at a cost of 33·19 cents per yard.

DREDGING AT GLENWOOD.

The dredge *New Brunswick* was engaged at the Glenwood wharf, St. John river, King's county, from August 20 to September 27, removing 20,600 cubic yards of mud at a cost of 11·73 cents per yard and improving the depth of water there.

DREDGING AT INTERCOLONIAL WHARF.

The dredge *New Brunswick* was engaged at the N.R.C. berth, St. John city, from the 11th to the 25th of May removing 1,750 cubic yards of mud at a cost of 42·73 cents per yard.

DREDGING AT JENKIN'S COVE.

The dredge *New Brunswick* was engaged from October 11 to November 8, at Jenkin's wharf, Belleisle, Kings county, removing 13,650 cubic yards of mud at a cost of 12·60 cents per yard, and improving the depth of water to the wharf.

DREDGING AT PARTRIDGE ISLAND.

The dredge *New Dominion* was engaged on December 7 improving the depth of water at the landing piers at Partridge island, St. John harbour, removing 175 cubic yards of gravel at a cost of 88·07 cents per yard.

DREDGING AT SHAMPER'S WHARF.

The dredge *New Brunswick* was engaged at Shamper's wharf, St. John river, from September 28 to October 10, removing 4,700 cubic yards of mud at a cost of 14·95 cents per cubic yard, and improving the depth of water to the wharf.

DREDGING AT SHIPPEGAN.

The dredge *George Mackenzie* was engaged in opening a new channel entrance at Shippegan harbour, Gloucester county, N.B., from July 1 to November 13, 1905, removing 38,455 cubic yards of mud at a cost of 29·59 cents per yard.

DREDGING AT ST. ANDREWS.

The dredge *New Dominion* was engaged from April 20 to June 30 opening a channel to the wharf at St. Andrews, Charlotte county, by removing 22,920 cubic yards of mud and stone at a cost of 24·80 cents per cubic yard.

DREDGING AT SPOON ISLAND.

The dredge *New Brunswick* was engaged from the 8th to the 19th of August at Spoon Island, Queens county, removing 6,315 cubic yards of mud at a cost of 12·50 cents per yard, and improving the depth of water to Mr. Mooney's wharf at that place.

6-7 EDWARD VII., A. 1907

DREDGING AT THE TRAVERSE, OAK POINT.

The dredge *St. Lawrence* was engaged on the Traverse, near Oak point light, Restigouche river, Restigouche county, from July 25 to August 3, removing 2,100 cubic yards of sand and silt at a cost of 48.59 cents per cubic yard and improving the depth of water at that place.

DREDGING, WEST CHANNEL.

The dredge *New Dominion* was engaged from October 5 to December 6, and from December 8 to December 12 in opening a trench across the west channel, St. John harbour, to Partridge island, in which to place water pipes to supply the island and immigration buildings, fog horn, &c., with fresh water, removing 8,140 cubic yards of sand and gravel at a cost of 48.67 cents per yard. The dredge *New Brunswick* was also engaged at the above work from November 27 to December 12, removing 75 cubic yards of gravel at a cost of \$16.15.72 per yard, when it was placed in winter quarters.

DREDGING AT WINTER PORT BERTHS.

The dredge *New Dominion* was engaged dredging for winter port berths, St. John harbour, when tides and weather would permit, from July 1 to October 3, removing 32,950 cubic yards of mud and boulders at a cost of 17.41 cents per cubic yard.

The dredge *New Brunswick* also worked at the winter port berths, St. John harbour, from July 1 to August 1, removing 8,040 cubic yards of mud and edgings, at a cost of 28.72 cents per yard.

PROVINCE OF PRINCE EDWARD ISLAND.

DREDGING AT CHARLOTTETOWN.

The dredge *Prince Edward* was engaged dredging at Carvell Brothers wharf from June 13 to June 22, removing 2,880 cubic yards of mud at a cost of 27.71 cents per yard; at Mr. George Fulls wharf from May 9 to June 12, removing 11,520 cubic yards at a cost of 26.05 cents per cubic yard; and at Peake Brothers' wharf from August 11 to 16, removing 1,800 cubic yards of mud at 27.42 cents per cubic yard. Also at Mr. Arthur Peake's wharf from April 27 to May 4, removing 1,080 cubic yards of mud at a cost of 54.41 cents per yard; and at the Pownal and Plant wharfs from November 7 to December 5, removing 9,517 cubic yards of mud at a cost of 23.65 cents per cubic yard. Also at the Prince Edward Island Railway wharf from July 28 to August 10 and from August 17 to November 6, 1905, and May 5 to May 8 and June 23 to June 30, 1906, removing 30,555 cubic yards of mud at a cost of 26.69 cents per cubic yard. This dredge also operated at Murray harbour river pier from July 1 to 7, 1905, removing 2,385 cubic yards of sand and mud at a cost of 23.14 cents per cubic yard, and at Wood Island from July 8 to July 27, 1905, removing 945 cubic yards of sand at a cost of \$1.95.78 cents per cubic yard.

MARITIME PROVINCES, DREDGES.

The Dredge 'St. Lawrence.'

Beginning the fiscal year 1905-6, the dredge *St. Lawrence* was from the 3rd to the 25th of July engaged at Campbellton, Restigouche county, N.B., dredging foundation for new pier, etc. From the 25th of July to the 3rd of August, the work was continued on the lower end of the Traverse, Oak point; and from the 4th to the 24th of

SESSIONAL PAPER No. 19

August, the dredging for new pier at Dalhousie was performed; and from the 25th of August to the 6th of September, dredging was done at the Intercolonial Railway wharf at Dalhousie; and from the 7th of September to the 15th of October, the dredge worked at the Ferry slip, Dalhousie. From the 16th to the 20th and on the 24th and 25th of October, the dredge worked at the Dalhousie Lumber Company wharf; on the 26th and 27th, took up moorings; on the 28th and 29th, making ready to leave for Pictou, N.S.; on the 31st sailed for Pictou; weather bad. Put into Port Daniel, P.Q.; 1st and 2nd of November at Port Daniel; 3rd, arrived at Point du Chêne, N.B.; 6th, left Point du Chêne and arrived at Charlottetown, P.E.I.; 7th, arrived at Pictou, N.S.; 8th, waiting for marine slip; 9th, went on marine slip, and, until the 20th, scraping and cleaning ship's bottom, ladder, well and hoppers, and painting same two coats of anticorrosive and one coat of antifouling preparation; placed new shackles in hopper door chains, also new rubbered hopper doors and new door-keepers. On the 21st of November, the dredge came off the marine slip; on the 22nd, took soundings, placed moorings to dredge at market wharf, and on the 23rd dredged two loads, and continued dredging there until the 27th; when moorings were lifted and placed at new Intercolonial Railway wharf; on the 28th, dredged one load—could not dredge in the morning, steamer in the way; on the 29th, dredged two loads, and broke one pile in new wharf; on the 30th, dredged two loads. December 1st to the 12th, dredged at new Intercolonial Railway pier when possible, steamers in the way and ice making; 13th, dredge frozen in at Dwyer's wharf; crew employed chipping rust and cleaning vessel until the 16th, when orders were given to land buckets on wharf, which was completed on the 22nd, when shoots and all gear were removed and stored for the winter by the 30th and crew paid off. Machinery was overhauled and repairs decided; a new water end for circulating pump procured; contract made with Pictou foundry for one new furnace, new set of tubes and new back connection for boiler, and for repairs to shoots and dredge buckets. The boiler contract called for completion by the 1st day of June, but owing to there being delay in procuring the necessary material, the contract was not completed at the close of the fiscal year, but it is expected the work will be finished and the dredge ready for work by the end of July.

The Dredge 'Canada.'

At the beginning of the fiscal year 1905-6, the dredge *Canada* was engaged operating on the channel at Lockeport, Shelburne county, Nova Scotia, from the 1st to the 15th of July, when it was ordered to Shelburne harbour, and worked there from the 16th of July to the 14th of August, improving the depth of water at the wharfs. At the latter date the dredge returned to Lockeport and worked on the channel there until the 29th of September, when it proceeded under orders to Mahone bay, Lunenburg county, N.S., and continued to work improving the harbour channel at that place from the 30th of September to the 22nd of December, when it went into winter quarters. Landed buckets and links on wharf, and by the 31st had everything stored and ready for winter. The crew was now paid off.

During the winter, the boiler had considerable repairs, shafting lined up, new gear wheels put in and general repairs completed by the 19th of April, when dredging was again resumed and continued at Mahone bay until the 22nd of June, when orders were given and dredge took up moorings and proceeded to Windsor, leaving on the 28th; arrived at Liverpool the same day; 29th, arrived at Lockeport—thick fog; 30th, fog in forenoon; sailed 11.40 a.m.; arrived at Barrington passage; detained by thick fog.

The Dredge 'New Dominion.'

Beginning the fiscal year 1905-6, this dredge was employed dredging at the winter port berths in St. John harbour, and continued the same until October 3, and from October 5 to December 6, and from December 8 to the 12th, it was engaged opening a

6-7 EDWARD VII., A. 1907

trench from the breakwater across the west channel to Partridge island to lay water pipes from the Carleton waterworks to the island. On December 7 it dredged at the landing piers at Partridge island and at the latter date was ordered into winter quarters.

During the winter season the necessary repairs were made to the dredge engine, boiler and machinery, also two scows, and being ready for work was removed to St. Andrews, in Charlotte county, N.B., where it began work on April 20, and was continuing the same at June 30, opening a channel into the wharfs through a shoal or bar in the harbour.

The Dredge 'Prince Edward.'

At the beginning of the fiscal year 1905-6, the dredge *Prince Edward* was engaged from the 1st to the 7th improving the channel at Murray river, King's county, Prince Edward Island, and from July 8 to the 27th in improving the entrance to the piers at Wood Islands. From July 28 to August 10, and August 17 to November 6 it was engaged at the Prince Edward Island wharf; from August 11 to the 16th it was employed at Peake Bros. wharfs, and from November 7 to December 5 it was engaged at the Pownal & Plant wharfs, when the dredge and plant were placed in winter quarters at Mr. Arthur Peake's wharf, Charlottetown. By April 27 the necessary repairs were completed to the dredge and scows, when under orders it dredged at Mr. Arthur Peak's wharf until May 4, and from May 5 to 8 dredging was performed at the Prince Edward Island Railway wharf, and from May 9 to June 12 work was performed for Mr. Geo. E. Full at his wharf; from June 13 to the 22nd for Carvell Bros. at their wharf, and then from June 23 to 30 at the Prince Edward Island Railway wharf, Charlottetown.

The Dredge 'George McKenzie.'

At the beginning of the fiscal year, the dredge *George McKenzie* was engaged opening a new channel at the entrance to Shippegan harbour and continued the work until November 13, when under orders it was placed in winter quarters at Lameque pier, Gloucester county. During the winter and early spring some necessary repairs were made. Orders were received, and as soon as ice left Lameque and Shippegan bay the dredge and scows were removed to Mabou harbour, Inverness county, N.S., and from May 13 to June 30 was engaged in improving the depth of water over the bar to that place and the channel of the river inside, when unable to dredge on the bar owing to unfavourable weather. This work was being continued at the close of the year.

The Dredge 'Cape Breton.'

On July 1, 1905, the dredge *Cape Breton* was at North Sydney and continued the work at Ingraham's wharf on the 3rd; at Salter's wharf on the 4th and 5th, when it was removed to Mabou in Inverness county, and resumed the dredging on the bar and channel of Mabou harbour from July 6 to October 3, and from October 4 to November 6 at government wharf at the head of the harbour; then from November 7 to 15 at the bar and channel, when it returned to the government wharf and worked from November 16 to the 20th improving the depth of water there. At the latter date, the dredge was under orders for Pictou, N.S., where dredge and barges arrived and was placed on the marine slip to clean and paint. This was done during the winter; the dredge's hull, engines, boiler and dredging machinery had attention, also the steel barges, and as soon as the ice left they were put afloat and, under orders, dredging was commenced on May 19 and continued until June 19 at the railway wharf, when a shaft was broken and the dredge was being repaired at the close of the year.

SESSIONAL PAPER No. 19

The Dredge 'New Brunswick.'

At the commencement of the fiscal year, this dredge was operating at the winter port berths, St. John harbour, and continued the same until August 1, when some necessary repairs were made, and it proceeded to Mr. Mooney's wharf, Spoon island, Queen's county, and operated from August 8 to the 19th. Then at Glenwood wharf, St. John river, from August 20 to September 27, and from September 28 to October 10 at Shamper's wharf; from October 11 to November 8 at Jenkin's cove wharf, and from November 9 to the 15th at Cedar's wharf. At the latter date, ice making, the dredge was under orders to St. John for winter quarters where it arrived, and from November 27 to December 12 assisted in opening a channel to Partridge Island for laying water pipes in connection with the Carleton waterworks and the island.

The dredge went into winter quarters at the latter date and the crew was paid off. During the winter the dredge and scows had necessary repairs. The crew was shipped and from May 11 to the 25th the dredge, under orders, worked at the Inter-colonial Railway slip deepening the water for the N.R.C.H., when the dredge was under orders and proceeded up river and resumed work at the Cedar's wharf, where work was being vigorously prosecuted at the close of the year.

The Dredge 'W. S. Fielding.'

The new elevator and sand-pump dredge *W. S. Fielding* arrived at Yarmouth, N.S., on October 5, and immediately under orders, proceedings were had to make the dredge ready for work, and by the 25th, moorings were laid and the first cargo dredged. As there is but 15 feet of water at low water at the entrance, with rock bottom, and the dredge when loaded draws about 19 feet, the rise of tide water has to be kept in view. With four or five miles to deposit, but one cargo is usually dredged. The channels is 16 feet and very narrow, with two steamers lying abreast at the wharfs and mud bank three or four feet dry at low water, it required the utmost care in managing the dredge to avoid injury to the dredge and these steamers in turning, and as the dredge when loaded has but little freeboard, the weather has to be considered in going to deposit.

The work required at Yarmouth is the deepening of the present channel to 18 feet and removing the banks of mud opposite the wharfs to that depth, but with the buckets the dredge draws too much water to get on these banks to dredge and the mud is too stiff and hard to be removed with the suction pump. For the chance the dredge has had at Yarmouth on trial, it has not done badly. From October 25 to December 30, and on April 9 to June 30, removing 83,440 cubic yards. Considerable repairs have been made and light parts made heavier, and an iron bulk-head placed between the engines and boilers to protect the engines.

The Dredge 'Montague.'

This dredge, built at the Bertram Works, Toronto, is about completed, and, after trial, will leave for Prince Edward Island.

The Dredge 'Northumberland.'

This dredge, built at the Polson Works, Toronto, is now being operated on trial, and is expected with 2,000-foot pontoons and 1,000 feet of spoil pipe to leave for the maritime provinces at an early date.

The Tug 'Cricket.'

This tug is owned by the department, and will require a new hull during the year.

6-7 EDWARD VII., A. 1907

The Tug 'Rona.'

This tug, owned by the department, is in attendance on the dredge *George McKenzie*, now working at Mabou, Inverness county, N.S.

Barges.

There are eight (8) steel hopper barges of 200 cubic yards capacity under contract for the dredges in the maritime provinces.

DREDGING PLANT.

The following is a summary description of the dredging plant owned and operated by the Public Works Department in the maritime provinces:—

The Self-propelling Elevator Dredge 'St. Lawrence' (iron hull).

Length over all—175 feet.

Beam—30 feet.

Draught when loaded aft—13·5 feet.

Draught when loaded forward—8·5 feet.

Least working depth (ladder with 32 buckets dropped 30 feet from bow), 8·5 feet.

Greatest working depth (bucket ladder dropped 40 feet from bow)—28 feet.

Capacity of hopper for spoil material—350 cubic yards.

Speed when light—6 to 7 miles per hour.

Speed when loaded—3 to 4 miles per hour.

Daily rate of dredging hard material—350 to 700 cubic yards.

“ ordinary earth—700 to 1,000 cubic yards.

“ soft material—1,050 to 1,400 cubic yards.

The Self-propelling Elevator Dredge 'Canada' (iron hull).

Length over all—130 feet.

Beam—20 feet.

Draught when loaded aft—11·5 feet.

Draught when loaded forward—7 feet.

Least working depth—7 feet.

Greatest working depth (ladder, 24 buckets)—16 feet.

Capacity of hopper for spoil material—90 cubic yards.

Speed when light and newly painted—6 to 7 miles per hour.

Speed when loaded—3 to 4 miles per hour.

Daily rate of dredging in hard bottom—180 to 270 cubic yards.

“ ordinary digging—180 to 360 cubic yards.

“ soft material—360 to 450 cubic yards.

The Spoon Dredge 'New Dominion' (wooden hull).

Length over all—90 feet.

Width—28 feet.

Draught—5½ feet.

Greatest working depth—21 feet.

Daily rate of dredging in hard material—300 cubic yards.

“ “ “ with ordinary material—450 cubic yards.

“ “ “ in soft material—600 to 700 cubic yards.

Number of dump scows or barges used—2.

SESSIONAL PAPER No. 19

The Spoon Dredge 'Prince Edward' (wooden hull).

Length over all—80 feet.

Width—28 feet.

Draught—6 feet.

Greatest working depth—21 feet.

Daily rate of dredging in hard material—300 cubic yards

“ “ “ with ordinary material—500 cubic yards.

“ “ “ in soft material—600 to 700 cubic yards.

Number of dump scows or barges used—3.

The Spoon or Dipper Dredge 'George McKenzie' (wooden hull).

Length—90 feet.

Width—28 feet.

Draught—6 feet.

Greatest working depth—22 feet.

Daily rate of dredging in hard material—350 cubic yards.

“ “ “ with ordinary material—500 cubic yards.

“ “ “ in soft material—600 cubic yards.

Number of dump scows or barges used—3

The Boom and Dipper Dredge 'Cape Breton' (steel hull).

Length—91 feet.

Beam—36 feet.

Draught—7½ feet.

Greatest working depth—34 feet.

Daily rate of dredging hard material—1,000 cubic yards.

“ “ “ ordinary material—1,500 cubic yards.

“ “ “ soft material—2,000 cubic yards.

Number of barges used (each of 210 cubic yards capacity—steel)—3.

The Claim Shell Dredge 'New Brunswick' (wooden hull).

Length over all—90 feet.

Width—25 feet.

Draught—2½ feet.

Greatest working depth—17 feet.

Daily rate of dredging in hard material—180 cubic yards.

“ “ “ ordinary material—300 cubic yards.

“ “ “ soft material—450 cubic yards.

Number of decked scows used—3 as at present and 2 bottom dumping scows.

Tug 'Cricket.'

Length—36.5 feet.

Beam—7.3 feet.

Draught—3.10 feet.

Horse-power—4.

Tug 'Rona.'

Length—85 feet.

Beam—19.3 feet.

Draught—8 feet.

Horse-power—25.

One pile driver, engine and boiler fitted on scow.

One stone lifter, engine and large grips (no boiler).

6-7 EDWARD VII., A. 1907

MEMORANDUM OF QUANTITIES REMOVED BY THE SEVERAL
DREDGES IN THE MARITIME PROVINCES DURING THE
FISCAL YEAR 1895-1906.

	Cubic Yards.
<i>St. Lawrence</i>	55,788
<i>Canada</i>	51,745
<i>New Dominion</i>	64,185
<i>Prince Edward</i>	60,682
<i>George McKenzie</i>	42 887
<i>Cape Breton</i>	126,770
<i>New Brunswick</i>	70,880
<i>W. S. Fielding</i>	83,440
Total.	556,377

SESSIONAL PAPER No. 19

CLASSIFICATION of Disbursements of the Dredges in the Maritime Provinces during the Year ending June 30, 1906.
DREDGE 'ST. LAWRENCE.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	618 01	505 00	505 00	480 51	500 08	520 76	300 42	272 19	270 15	290 00	361 27	422 01	5,045 40
Coal.....	812 17	376 88	12 25	11 00	11 00	122 50	521 70	.....	13 50	.....	.....	.....	1,870 00
Provisions.....	218 11	160 36	167 47	241 33	108 56	131 27	.....	.....	.....	.....	59 79	187 57	1,274 46
Stores.....	28 10	.....	15 82	12 28	.....	17 80	.....	.....	.....	24 18	30 53	41 41	168 12
Equipment.....	6 15	.....	10 02	.....	.....	.....	.....	.....	22 12	.....	.....	.....	176 02
Water.....	22 80	11 60	7 30	11 65	.....	1 00	.....	.....	.....	.....	.....	.....	54 35
Repairs.....	389 82	.....	20 43	20 43	1,230 34	265 78	19 02	.....	.....	531 46	.....	288 45	2,745 30
Pilotage.....	160 00	135 00	130 00	130 00	72 50	122 50	.....	.....	.....	10 00	.....	.....	750 00
Towage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9 07	44 26	.....	10 00
Contingencies ..	68 38	4 58	.....	.....	13 77	2 23	13 73	.....	13 91	.....	.....	.....	169 93
Totals.....	2,321 54	1,193 42	847 86	896 20	1,936 25	1,183 84	854 87	272 19	319 68	864 71	495 85	1,077 17	12,263 58
Working expenses.....	1,431 72	1,193 42	847 86	875 77	705 91	918 06	549 43	Nil	292 27	43 25	495 85	788 72	8,642 26
Repairs, Ordinary.....	Nil	Nil	Nil	20 43	1,230 34	Nil	Nil	Nil	Nil	Nil	Nil	288 45	1,539 22
" Extraordinary.....	389 82	Nil	Nil	Nil	Nil	265 78	306 44	272 19	27 41	821 46	Nil	Nil	2,062 10
Totals.....	2,321 54	1,193 42	847 86	896 20	1,936 25	1,183 84	854 87	272 19	319 68	864 71	495 85	1,077 17	12,263 58

6-7 EDWARD VII., A. 1907

CLASSIFICATION of Disbursements of the Dredges in the Maritime Provinces during the Year ending June 30, 1906.—*Continued.*
DREDGE 'CANADA.'

ITEMS.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	437 00	432 81	431 66	432 00	432 00	472 00	227 00	227 00	227 00	371 14	490 10	484 00	4,663 71
Coal.....	239 20	1 25	181 10	330 00	220 00	638 00	.....	.....	.....	8 81	53 34	467 50	2,077 05
Provisions.....	145 96	139 20	147 54	149 11	147 89	153 96	.....	.....	.....	227 53	3 09	570 28	1,516 09
Stores.....	.....	4 65	4 50	17 15	28 25	.....	.....	.....	32 35	104 01	.....	116 75	434 27
Equipment.....	.....	2 00	24 00	.....	42 10	.....	.....	.....	3 80	.....	.....	.....	175 91
Water.....	16 10	15 20	10 10	20 10	14 55	11 40	.....	.....	.....	18 30	.....	37 00	142 75
Repairs.....	1,622 25	122 79	311 08	68 68	.....	135 62	49 66	10 64	704 40	407 31	43 14	8 16	3,483 73
Pilotage.....	52 00	52 00	50 00	52 00	52 00	.....	.....	.....	.....	.....	.....	10 00	268 00
Wharfage.....	8 00	10 50	15 00	12 50	14 00	4 50	.....	.....	.....	2 50	.....	28 50	95 50
Contingencies.....	5 72	9 56	17 39	3 61	2 86	4 09	9 45	.....	1 43	4 28	3 32	3 75	65 46
Totals.....	2,526 23	789 96	1,192 37	1,085 15	953 65	1,419 57	286 11	237 64	963 98	1,143 88	592 99	1,725 94	12,922 47
T. Thompson.....	.....	.....	.....	.....	.....	.....	30 00	.....	.....	.....	.....	.....	30 00
Working expenses.....	903 98	667 17	881 29	1,016 47	953 65	1,283 95	9 45	Nil.	264 53	758 91	549 75	1,717 78	9,006 98
Repairs, Ordinary.....	Nil.	Nil.	15 36	Nil.	Nil.	30 00	Nil.	Nil.	70 75	Nil.	43 24	8 16	167 51
" Extraordinary.....	1,622 25	122 79	206 72	68 68	Nil.	106 62	276 66	237 64	633 65	384 97	Nil.	Nil.	3,747 98
Totals.....	2,526 23	789 96	1,192 37	1,085 15	953 65	1,419 57	286 11	237 64	963 98	1,143 88	592 99	1,725 94	12,922 47
T. Thompson.....	.....	.....	.....	.....	.....	.....	30 00	.....	.....	.....	.....	.....	30 00
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12,892 47

SESSIONAL PAPER No. 19

DREDGE 'NEW DOMINION'.

Wages.....	409 85	433 58	521 62	400 59	387 28	303 53	135 00	315 38	358 89	457 07	407 89	399 65	4,530 83
Coal.....	69 89	53 53	102 73	48 70	45 18	77 59	11 46	118 70	.....	535 67	37 30	118 70	786 89
Provisions.....	3 00	6 69	78 94	3 00	9 78	.....	3 20	.....	.....	77 12	36 03	151 88	760 49
Stores.....	.....	.....	11 88	113 10	.....	.....	36 00	.....	.....	41 01	134 73	74 48	286 27
Equipment.....	58 87	70 76	78 88	42 00	33 00	11 38	.....	.....	.....	9 50	9 75	30 00	358 31
Water.....	522 11	23 02	131 21	172 08	29 43	41 40	185 67	250 90	98 40	52 55	38 82	40 86	344 14
Repairs.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25 00	.....	.....	1,586 63
Pilotage.....	545 00	763 00	775 00	800 00	735 00	480 00	.....	.....	3 00	390 00	.....	1,530 00	25 00
Towage.....	.....	1 85	.....	1 20	.....	0 83	0 80	.....	12 06	4 26	1 37	6 02	6,621 00
Contingencies.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28 39
Totals.....	1,608 72	1,386 04	1,700 26	1,687 14	1,389 16	914 73	372 13	566 37	472 44	1,592 18	665 89	2,351 39	14,706 45
Working expenses.....	1,086 61	1,302 02	1,468 06	1,406 80	1,359 73	869 33	50 66	Nil.	15 06	1,376 87	627 07	2,310 53	11,962 73
Repairs, ordinary.....	Nil.	Nil.	7 45	26 25	Nil.	Nil.	Nil.	Nil.	Nil.	46 75	38 82	40 86	160 13
" extraordinary.....	522 11	84 02	224 76	164 09	29 43	45 40	321 47	566 37	457 38	168 56	Nil.	Nil.	2,583 59
Totals.....	1,608 72	1,386 04	1,700 26	1,687 14	1,389 16	914 73	372 13	566 37	472 44	1,592 18	665 89	2,351 39	14,706 45

DREDGE 'PRINCE EDWARD'.

Wages.....	435 24	430 00	425 20	410 75	422 62	496 39	210 00	279 73	509 39	479 68	437 50	412 47	4,948 97
Coal.....	72 03	29 02	52 68	.....	115 34	211 24	40 32	.....	58 64	228 17	7 89	208 48	579 46
Provisions.....	104 47	11 28	.....	.....	.....	224 88	.....	.....	.....	8 21	.....	430 25	1,215 28
Stores.....	265 05	15 72	.....	.....	.....	215 93	101 31	.....	.....	.....	.....	8 56	614 77
Equipment.....	74 88	3 04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	77 92
Water.....	25 35	.....	.....	.....	13 50	26 05	.....	.....	.....	12 00	.....	.....	76 90
Repairs.....	1,925 83	19 51	75 45	206 80	.....	277 38	62 14	.....	115 48	56 50	.....	77 24	2,819 39
Towage.....	960 00	910 00	750 00	750 00	780 00	360 00	.....	.....	.....	210 00	780 00	780 00	6,280 00
Wharfage.....	106 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	106 50
Contingencies.....	14 10	.....	14 40	.....	25 00	53 97	1 96	.....	7 85	.....	.....	.....	117 27
Totals.....	3,984 51	1,418 57	1,317 73	1,367 55	1,356 46	1,865 89	314 41	381 04	691 36	996 56	1,225 39	1,916 99	16,836 46
Working expenses.....	2,057 62	1,399 06	1,242 28	1,160 75	1,356 46	1,588 51	42 27	101 31	66 49	723 31	1,225 39	1,839 75	12,803 20
Repairs, ordinary.....	Nil.	19 51	Nil.	18 06	Nil.	5 18	Nil.	Nil.	Nil.	49 00	Nil.	77 24	168 98
" extraordinary.....	1,928 89	Nil.	75 45	188 75	Nil.	272 20	272 14	279 73	624 87	224 25	Nil.	Nil.	3,864 28
Totals.....	3,984 51	1,418 57	1,317 73	1,367 55	1,356 46	1,865 89	314 41	381 04	691 36	996 56	1,225 39	1,916 99	16,836 46

6-7 EDWARD VII., A. 1907

CLASSIFICATION of Disbursements of the Dredges in the Maritime Provinces during the Year ended June 30, 1906.—*Continued.*
DREDGE 'GEORGE MCKENZIE.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	402 19	403 01	405 00	405 00	291 99	190 00	190 00	341 77	223 51	301 80	441 57	398 08	3,993 92
Coal.....	445 05					55 00						64 17	3,564 22
Provisions.....	95 98	10 74	111 35	4 68	2 16	118 00			2 29		27 57	608 16	980 93
Stores.....			6 50			6 24			13 96		11 80	163 80	201 30
Equipment.....			178 49			98 81					218 03	605 23	1,095 56
Water.....	176 50	36 00	170 50	39 00	18 00	277 00						192 50	900 50
Repairs.....	3 50		103 37	41 92		1 76	113 36		129 85			94 59	490 35
Pilotage.....											5 00		5 00
Towage.....	540 00	735 00	607 50	607 50	360 00							540 00	3,300 00
Wharfage.....												35 00	35 00
Contingencies.....	2 60	1 12	3 11	1 36	5 20	6 75			46 81			14 55	81 50
Totals.....	1,665 82	1,185 87	1,587 82	1,099 46	677 35	747 56	303 36	341 77	416 42	301 80	703 97	2,716 08	21,747 28
Working expenses.....	1,662 32	1,185 87	1,482 45	1,057 54	677 35	491 99	Nil.	Nil.	63 06	Nil.	703 97	2,621 49	9,916 04
Repairs, ordinary.....	3 50	Nil.	Nil.	11 81	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	94 59	109 90
" extraordinary.....	Nil.	Nil.	105 37	30 11	Nil.	286 57	303 36	341 77	353 36	301 80	Nil.	Nil.	1,721 34
Totals.....	1,665 82	1,185 87	1,587 82	1,099 46	677 35	747 56	303 36	341 77	416 42	301 80	703 97	2,716 08	11,747 28

SESSIONAL PAPER No. 19

DREDGE 'CAPE BRETON.'

Wages	466 13	445 00	444 25	445 00	445 00	349 25	140 34	45 00	93 23	231 83	463 90	487 73	4,046 72
Coal	70 00	234 00	70 00	158 09	158 09	143 60	.....	31 08	.....	.....	131 18	70 21	637 06
Provisions	177 45	.....	227 93	219 43	219 43	19 60	.....	.....	.....	.....	9 07	360 50	1,137 98
Stores .....	.....	.....	91 76	.....	.....	.....	.....	.....	.....	83 84	5 15	107 34	267 69
Equipment	12 50	.....	5 00	22 50	10 00	.....	.....	.....	.....	531 50	.....	768 58	1,300 08
Water	196 13	.....	163 88	31 73	.....	985 18	.....	.....	255 04	15 00	.....	13 00	78 00
Repairs	5 00	.....	.....	.....	.....	.....	.....	.....	.....	143 55	9 40	41 00	1,826 91
Pilotage	762 75	810 00	750 00	1,550 00	1,550 00	210 00	.....	.....	.....	5 00	2 00	.....	7 00
Towage .....	.....	.....	.....	30 60	.....	.....	.....	.....	.....	.....	.....	2,005 00	6,902 75
Wharfage	12 68	.....	6 82	1 75	12 92	3 19	.....	.....	32 90	3 13	16 92	10 42	30 00
Contingencies .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100 73
Totals	1,702 64	1,489 00	1,759 64	1,353 48	2,395 44	1,710 82	140 34	76 08	382 23	963 85	627 62	3,923 78	16,524 92
Working expenses	1,506 51	1,489 00	1,595 76	1,321 75	2,395 44	725 54	Nil.	Nil.	95 51	820 30	618 22	3,892 78	14,450 81
Repairs, ordinary	Nil.	Nil.	Nil.	Nil.	Nil.	194 85	Nil.	Nil.	Nil.	Nil.	9 40	41 00	245 25
" extraordinary	196 13	Nil.	163 88	31 73	Nil.	790 43	140 34	76 08	266 72	143 55	Nil.	Nil.	1,828 86
Totals	1,702 64	1,489 00	1,759 64	1,353 48	2,395 44	1,710 82	140 34	76 08	382 23	963 85	627 62	3,923 78	16,524 92

DREDGE 'NEW BRUNSWICK.'

Wages	541 33	376 67	362 10	529 95	324 17	342 18	120 00	120 00	120 00	155 30	361 73	330 62	3,984 05
Coal	144 73	163 04	171 27	112 36	90 57	37 50	.....	.....	.....	.....	189 53	108 12	796 64
Provisions	112 55	49 04	122 43	112 36	67 61	76 69	.....	.....	.....	15 90	179 74	66 10	844 45
Stores	33 57	16 49	3 42	.....	5 98	20 85	.....	.....	.....	.....	12 15	41 56	158 56
Equipment	60 00	.....	34 27	.....	.....	.....	65 55	.....	.....	.....	42 15	.....	243 53
Water	53 00	10 00	3 75	2 00	12 50	8 25	.....	.....	.....	8 25	18 88	.....	116 63
Repairs	29 69	77 86	666 67	90 00	.....	52 73	95 84	17 62	203 94	126 96	60 54	9 97	1,431 82
Towage	791 25	93 75	923 74	496 67	326 67	450 00	.....	14 00	.....	.....	251 25	7 50	3,354 83
Contingencies .....	.....	1 37	.....	1 98	3 94	.....	.....	7 40	.....	1 35	.....	1 69	17 73
Totals	1,766 13	788 22	2,287 65	1,232 96	831 44	988 20	281 39	159 02	323 94	307 76	1,115 97	565 56	10,648 24
Working expenses	1,736 44	702 36	1,589 98	944 45	831 44	813 59	65 55	21 40	Nil.	25 50	1,065 43	555 59	8,941 73
Repairs, ordinary	29 69	Nil.	6 89	Nil.	Nil.	174 61	Nil.	137 62	323 94	9 39	60 54	Nil.	116 48
" extraordinary	Nil.	85 86	690 78	288 51	Nil.	174 61	215 84	.....	.....	272 87	Nil.	Nil.	2,190 03
Totals	1,766 13	788 22	2,287 65	1,232 96	831 44	988 20	281 39	159 02	323 94	307 76	1,115 97	565 56	10,648 24

6-7 EDWARD VII., A. 1907

CLASSIFICATION of Disbursements of the Dredges in the Maritime Provinces during the Year ending June 30, 1906.—*Concluded.*
DREDGE 'W. S. FIELDING.'

ITEMS.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	190 00	190 00	190 00	190 00	190 00	153 36	110 00	100 00	100 00	164 82	190 60	195 00	1,963 18
Coal.....	50 26				315 00	315 00				894 86	1,058 28	903 68	6,623 58
Provisions.....	89 92	46 20	55 01	3 72	2 40	52 95				1,016 51	506 50	506 38	3,992 04
Stores.....						4 98				197 85	12 13	452 52	1,270 97
Equipment.....										137 23		138 88	498 88
Repairs.....										44 57			48 57
Pilotage.....	164 19			11 80						240 11		19 76	554 00
Towage.....		5 00								250 00	265 00	130 00	290 00
Contingencies.....		1 99		2 48		10 41			6 01	12 19	12 87	4 92	1,865 00
Totals.....	Nil.	Nil.	Nil.	Nil.	3,295 39	1,949 25	1,449 31	542 68	670 85	2,793 32	1,854 78	2,631 14	15,186 72
Working expenses.....					3,295 39	1,897 68	1,349 34	19 40	590 54	2,553 21	1,854 78	2,611 38	14,131 72
Repairs, ordinary.....					Nil.	Nil.	Nil.	22 28	80 31	88 88	Nil.	19 76	211 23
" extraordinary.....					Nil.	51 57	139 97	501 00	Nil.	151 23	Nil.	Nil.	843 77
Totals.....	Nil.	Nil.	Nil.	Nil.	3,295 39	1,949 25	1,449 31	542 68	670 85	2,793 32	1,854 78	2,631 14	15,186 72

TUG 'RONA.'													
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	190 00	190 00	190 00	190 00	190 00	153 36	110 00	100 00	100 00	164 82	190 60	195 00	1,963 18
Coal.....	50 26					315 00				894 86	1,058 28	903 68	6,623 58
Provisions.....	89 92	46 20	55 01	3 72	2 40	52 95				1,016 51	506 50	506 38	3,992 04
Stores.....						4 98				197 85	12 13	452 52	1,270 97
Equipment.....										137 23		138 88	498 88
Repairs.....										44 57			48 57
Pilotage.....	164 19			11 80						240 11		19 76	554 00
Towage.....		5 00								250 00	265 00	130 00	290 00
Contingencies.....		1 99		2 48		10 41			6 01	12 19	12 87	4 92	1,865 00
Totals.....	330 18	407 38	245 01	208 00	192 40	536 70	113 55	117 22	100 00	306 63	402 60	513 41	3,472 98
Working expenses.....	330 18	243 19	245 01	196 20	192 40	536 70	Nil.	17 22	100 00	67 66	284 38	513 41	2,736 35
Repairs, ordinary.....	Nil.	Nil.	Nil.	11 80	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	118 12	Nil.	129 92
" extraordinary.....	Nil.	164 19	Nil.	Nil.	Nil.	Nil.	113 55	100 00	Nil.	288 97	Nil.	Nil.	616 71
Totals.....	330 18	407 38	245 01	208 00	192 40	536 70	113 55	117 22	100 00	306 63	402 60	513 41	3,472 98

SESSIONAL PAPER No. 19

CLASSIFICATION AND QUANTITIES OF Material removed by Dredges in the Maritime Provinces during the Year ending June 30, 1906.

DREDGE 'ST. LAWRENCE.'

Description of Material Dredge.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Boulders, slabs and edgings.....		488											488
Gravel, sand and stone.....	3,850												3,850
Clay.....			6,650	350									7,000
Stumps and sticks.....	5,950												5,950
Sand.....	1,400	700											2,100
Mud and slabs.....		17,500	7,000	6,650	3,150	2,100							36,400
Totals.....	11,200	18,688	13,650	7,000	3,150	2,100	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	55,788

DREDGE 'CANADA.'

Gravel, stone and mud.....	990	810											1,800
Mud and sawdust.....				630	810								1,440
Sand and mud.....	2,430	3,060	1,260										6,750
Mud.....			7,020	8,725	6,570	3,240				2,880	8,010	5,310	41,755
Totals.....	3,420	3,870	8,280	9,355	7,380	3,240	Nil.	Nil.	Nil.	2,880	8,010	5,310	51,745

6-7 EDWARD VII., A. 1907

CLASSIFICATION AND QUANTITIES OF MATERIAL REMOVED BY DREDGES IN THE MARITIME PROVINCES, &c.—Continued.
DREDGE 'NEW DOMINION.'

Description of Material Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Boulders, clay and mud gravel.....	4,650	2,175	3,125	4,300	635	.....	.....	.....	.....	.....	.....	.....	6,825
Clay, mud and stone.....	7,625	.....	.....	.....	2,250	.....	.....	.....	.....	.....	.....	.....	15,635
Sand and mud.....	.....	.....	.....	.....	545	585	.....	.....	.....	.....	.....	.....	2,250
Sand.....	.....	6,375	9,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,130
Mud and clay.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10,125	12,795	38,235
Totals.....	12,275	8,550	12,125	4,300	3,430	585	Nil.	Nil.	Nil.	Nil.	10,125	12,795	64,185

DREDGE 'PRINCE EDWARD.'

Clay and mud.....	945	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,840	.....	6,840
Sand ordinary.....	.....	2,925	8,100	10,800	6,592	1,440	.....	.....	.....	540	765	2,160	945
Sand and mud.....	2,385	4,860	.....	.....	2,925	.....	.....	.....	.....	.....	2,835	6,570	33,322
Mud.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19,575
Totals.....	3,330	7,785	8,100	10,800	9,517	1,440	Nil.	Nil.	Nil.	550	10,440	8,730	60,682

DREDGE 'GEO. MCKENZIE.'

Gravel, clay and sand.....	.....	.....	1,485	6,735	2,885	.....	.....	.....	.....	.....	.....	945	11,985
Clay, mud and sand.....	10,665	9,310	7,430	.....	.....	.....	.....	.....	.....	.....	742	2,745	27,405
Sand, ordinary.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,487
Totals.....	10,665	9,310	8,915	6,730	2,885	Nil.	Nil.	Nil.	Nil.	Nil.	742	3,690	42,887

SESSIONAL PAPER No. 19

DREDGE 'CAPE BRETON.'

12 Mud shells and sticks.	315	21,115	Nil	Nil	Nil	Nil	4,200	14,000	21,115
17 Boulders and mud.	9,450								315
14 Gravel, sand stone and clay.		2,310							9,450
Clay, sand and gravel.		14,910							17,220
Logs, clay and mud.		18,060							18,200
Sand, ordinary.									19,320
Sand and gravel.									1,050
Mud, logs and edging.									40,100
Totals.	9,765	14,910	20,370	38,420	25,105	36,110	3,990		126,770

DREDGE 'NEW BRUNSWICK.'

Mud, logs and sticks.	3,350	12,100	3,050	1,850					20,350
Gravel and clay.	135		400						535
Clay and mud.	5,285		3,900	2,600					11,785
Sand and gravel.		3,400	6,150	2,900	75				38,135
Mud and clay.	7,790								70,880
Totals.	7,790	15,500	13,500	7,350	75	Nil	Nil	12,000	

DREDGE 'W. S. FIELDING.'

Mud, gravel and rock.				4,350	1,750				4,350
Gravel, mud and clay.			500	2,100	800				11,500
Clay, mud and rock.				2,800	6,050				15,750
Sand—ordinary, mud, gravel and stone.			750	8,100		800			28,350
Mud.									23,490
Totals.	Nil	Nil	1,250	13,000	15,650	2,550	13,900	17,350	83,440

6-7 EDWARD VII., A. 1907

DETAILS OF DREDGING IN THE MARITIME PROVINCES.
For the Fiscal Year ending 30th June, 1906.

Dredge.	Locality.	Date.	Time Dredging.	Quantity. Cubic yds.	Expendi- ture at Locality.	Per Cubic Yard for Local Expendi- ture.	Winning, Repairs, Equipment and pro rata.	Total Cost.	Per Cubic Yard for Total Expendi- ture.
			Hrs. Min.	C. Yds.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
St. Lawrence...	Campbellton (Contract) Restigouche	July 3 to 22, 1905.	84 05	9,800	1,004 30	0 10 24	1,249 81	2,254 11	0 23 00
	Co. N. B.	July 23 to Aug. 3, 1905.	10 25	2,100	454 71	0 21 17	565 57	1,020 58	0 48 59
	Traverse (Oak Point) Restig. Co. N. B.	Aug. 4 to 24, 1905.	84 25	13,536	813 41	0 05 00	1,012 26	1,825 67	0 13 69
	Dalhousie (McManus) "	Aug. 25 to Sept. 6, 1905.	41 45	8,460	536 20	0 06 33	667 28	1,203 48	0 14 22
	" Railway wharf "	Sept. 7 to Oct. 15, 1905.	67 45	12,992	1,618 35	0 12 45	2,013 96	3,632 33	0 27 95
	" Ferry Landing "	Oct. 16 to 20 & 24 & 25, Oct.	23 10	3,850	569 30	0 14 78	708 48	1,277 78	0 33 19
	" Hillyards "	Nov. 22 to 26, 1905.	6 20	1,400	157 47	0 11 24	195 97	353 44	0 25 24
	Market whf., Pictou, Pictou Co. N. S.	Nov. 27 to Dec. 12, 1905.	19 35	3,850	587 16	0 15 25	730 71	1,317 87	0 34 23
	Railway whf. "	July 1 to 15 & Aug. 15 to Sept.							
	Lockeport, Shelburne Co.	29, 1905	163 40	13,770	2,021 08	0 14 67	1,043 01	3,063 09	0 22 23
Canada	Shelburne, "	July 16 to Aug. 14, 1905.	43 01	1,800	892 27	0 49 57	460 02	1,352 29	0 75 12
	Mahone Bay, Lunenburg Co.	Sept. 30 to Dec. 22 & Apl. 19 to							
	" "	June 22, 1906.	377 30	38,175	6,024 56	0 16 65	3,106 08	9,130 64	0 25 26
New Dominion	Winter Berths, St. John, St. John	July 1 to Oct. 3, 1905	622 30	32,950	4,485 93	0 13 007	1,261 96	5,737 89	0 17 41
	Co. N. B.								
	West Channel for water pipe St. John	Oct. 5 to Dec. 6 & Dec. 8 to							
Prince Edward	Co. N. B.	12, 1905.	151 45	8,140	3,097 54	0 38 05	864 49	3,962 03	0 48 67
	Patridge Island, St. John Co., N. B.	Dec. 7	3 00	175	52 09	0 29 76	14 54	66 63	0 38 07
	St. Andrews, Charlotte Co., N. B.	Apl. 20 to June 30, 1906.	359 15	22,020	4,444 90	0 19 39	1,240 51	5,685 41	0 24 80
	Murray River, Kings Co., P. E. I.	July 1 to 7, 1905.	42 00	2,385	345 97	0 14 51	205 91	551 88	0 23 14
	Wood Islands, Queens Co., P. E. I.	July 8 to 27, 1905.	32 00	945	1,159 85	1 22 73	690 27	1,850 12	1 46 78
	Charlottetown, Railway wharf, P. E. I.	July 28 to Aug. 10 & Aug. 17 to							
	" "	Nov. 6, 1905 & May 5 to 8 &							
	" "	June 23 to 30, 1906.	590 50	30,555	5,113 05	0 16 73	3,042 95	8,156 01	0 26 69
	Peake Bros, "	Aug. 11 to 16, 1905.	41 40	1,800	309 42	0 11 63	184 14	493 56	0 27 42
	Pownal & Plant Line								
	whf., P. E. I.	Nov. 7 to Dec. 5, 1905.	187 40	9,517	1,411 03	0 14 82	839 75	2,250 78	0 23 65
	Arthur Peake's whf.,								
	P. E. I.	Apl. 27 to May 4, 1906.	43 00	1,080	368 38	0 31 10	219 23	587 61	0 54 41
	Geo. E. Full's whf.,								
	P. E. I.	May 9 to June 12, 1906.	206 00	11,520	1,881 95	0 16 34	1,120 01	3,001 96	0 26 05

19-iv-141

Digitized by Google

SESSIONAL PAPER No. 19

Halifax.	Cook's Cove.....	16,815	7,336 29			16,815	7,336 29
	St. Mary's River.....	81,812	22,352 04			81,812	22,352 04
	Tickle Passage, Little Canso..	3,015	4,477 97			3,015	4,477 97
	Bars Sonora, St. Mary's River	5,628	2,204 33	57,295 31		5,628	2,204 33
	Chezzetcook.....	3,920	2,593 71			3,920	2,593 71
	Halifax Ferry.....	6,177	2,063 38			6,177	2,063 38
	Herring Cove.....	26,101	12,049 68			26,101	12,049 68
	Ketch Harbour.....	4,227	1,690 53			4,227	1,690 53
	Richmond Wharf.....	732	182 53			732	182 53
	Roche's Wharf.....	1,750	620 28			1,750	620 28
	Halifax Railway terminus...	35,565	11,056 79			35,565	11,056 79
	Jeddore.....	21,515	4,958 56			21,515	4,958 56
	North West Arm.....	7,350	2,970 39			7,350	2,970 39
	Cunard's Wharf.....	1,400	530 04			1,400	530 04
	Salmon River.....	14,288	5,962 93			14,288	5,962 93
	Spry Bay.....	10,665	3,075 72			10,665	3,075 72
	Eastern Passage.....	2,070	596 97			2,070	596 97
	Sambo.....	4,815	1,388 61	49,740 12		4,815	1,388 61
Inverness.	Whycocomagh.....	19,760	3,491 31			19,760	3,491 31
	Campbell's Pond.....	4,940	872 83			4,940	872 83
	Port Hastings.....	270	190 37			270	190 37
	Cheticamp.....	206,275	71,409 02			206,275	71,409 02
	Malou.....	201,477	60,237 00			201,477	60,237 00
Lunenburg.	Port Hood.....	10,123	5,696 99			10,123	5,696 99
	Grand Etang.....	10,980	3,431 25	145,328 77		10,980	3,431 25
	Lunenburg.....	70,510	22,194 57			70,510	22,194 57
	Malou Bay.....	21,844	5,958 65			21,844	5,958 65
	Vogler's Cove.....	11,610	5,075 53	33,228 75		11,610	5,075 53
	Acadia Coal Co., wharf.....	22,460	5,262 26			22,460	5,262 26
	Albion Mine.....	9,475	2,181 25			9,475	2,181 25
	East River.....	144,407	47,696 43			144,407	47,696 43
	Halifax Coal Co., wharf.....	1,650	359 90			1,650	359 90
	Pictou Public Market, wharf..	113,200	27,014 78			113,200	27,014 78
	" Railway.....	64,649	16,337 69			64,649	16,337 69
	" Landing Ry.....	48,645	8,898 40			48,645	8,898 40
	" Steam Ferry Co. Slip..	720	246 18			720	246 18
	" Bar.....	42,700	4,153 25			42,700	4,153 25
	" Hogg, Craig & Co. whf	6,090	1,204 29			6,090	1,204 29
	" Burnham & Morrell.....	1,050	211 19			1,050	211 19
	" Vale Colliery.....	1,395	682 15			1,395	682 15
	River John.....	85,173	22,243 98			85,173	22,243 98
	Granton.....	25,110	10,707 59			25,110	10,707 59
	New Glasgow.....	35,445	11,795 79			35,445	11,795 79
	Middle River.....	15,060	4,984 40			15,060	4,984 40
	C. Dwyer's Wharf.....	5,400	1,087 66			5,400	1,087 66
	" berths for S.S. 'Campania'	5,850	2,000 22			5,850	2,000 22
	Intercolonial Coal Mining Co.						
	East River, Pictou.....	46,900	7,410 86	174,601 36		46,900	7,410 86
Queens.	Liverpool.....	82,230	31,944 10			82,230	31,944 10
	Port Monton.....	10,620	2,283 77	34,227 87		10,620	2,283 77

6-7 EDWARD VII., A. 1907

EXPENDITURE for dredging in Nova Scotia for the thirty-four years ended June 30, 1906—*Concluded.*

County.	Locality.	TOTAL FOR THE THIRTY THREE YEARS ENDED JUNE 30, 1906.				FOR THE YEAR 1906-06.				Total quantity.	Total Cost.	Cost for each County.
		Quantity.	Cost.	Cost for County.	Quantity.	Cost.	Cost for County.	Quantity.	Cost.			
		Cubic yards.	\$ cts.	\$ cts.	Cubic yards.	\$ cts.	\$ cts.	Cubic yards.	\$ cts.	Cubic yards.	\$ cts.	\$ cts.
Richmond	D'Escoisse	28,650	10,052 76					28,650	10,052 76			
	St. Peter's Canal	90,890	27,435 95					90,890	27,435 95			
	St. Peter's	7,150	2,407 41					7,150	2,407 41			
	Grand Goulet	23,584	5,570 49					23,584	5,570 49			
	River Bourgeois	18,920	4,468 87					18,920	4,468 87			
	Marine Slip	320	56 53					320	56 53			
	Poulement	10,080	2,566 14					10,080	2,566 14			
	Fourchu Harbour	16,875	9,454 94	6,213 09				16,886	9,454 94			
	Lockeport	80,398	18,986 49					80,398	18,986 49			
	Barrington Passage	42,670	13,607 03		13,770	3,063 09		42,670	13,607 03			62,013 09
Shelburne.	Osborne	990	145 31					990	145 31			
	Woods Harbour	1,170	245 45					1,170	245 45			
	Harrington Public Wharf,	61,020	17,612 09					61,020	17,612 09			
	Sherrows Channel	7,320	2,804 66	53,201 03	1,800	1,352 29	4,415 38	9,120	3,956 95			57,616 41
	Shelburne.	421,912	114,461 31		83,440	15,966 57		505,352	130,417 88			130,917 34
	Yarmouth.	683	499 46	114,960 77				683	499 46			1,627 60
	Milton.	5,480	1,627 60	1,527 60				5,480	1,627 60			1,569 95
	Windsor	3,820	1,569 95					3,820	1,569 95			762 80
	Aspey Bay											
	Dredge 'C. B. losses											
Totals		3,142,741	947,804 65	947,804 65	271,637	53,151 69	53,151 69	3,414,378	1,000,956 34			1,000,956 34

SESSIONAL PAPER No. 19

EXPENDITURE for dredging in New Brunswick for the thirty-four years ended June 30, 1906.

County.	Locality.	FOR THE THIRTY-THREE YEARS ENDED JUNE 30, 1905.				FOR THE YEAR 1905-6.				Total Quantity.	Total Cost.	Cost for each County.
		Quantity		Cost.		Quantity		Cost.				
		Cubic yards.	\$ cts.	\$ cts.	\$ cts.	Cubic yards.	\$ cts.	\$ cts.	\$ cts.			
Charlotte. Gloucester.	St. Andrews.	98,637	29,085 79			22,920	5,685 41			22,920	5,685 41	5,685 41
	Bathurst.	16,485	6,312 28							98,637	29,085 79	
	Shippegan.	26,090	10,075 47	45,483 49						16,485	6,312 28	
	Richibucto.	172,778	53,544 01			38,465	11,376 64			64,545	21,452 11	56,860 13
Kent.	Cocagne.	27,180	9,601 45							53,544 01	172,778	
	Bouctouche.	13,005	4,934 24							27,180	9,601 45	
	"	3,510	1,110 70							13,005	4,934 24	
	"	4,140	1,310 07							3,510	1,110 70	
King's.	"	45	14 23	70,514 70						4,140	1,310 07	70,514 70
	Bellisle Point	79,905	13,052 23							45	14 23	
	Kennebecasis River.	116,270	20,081 83							79,905	13,052 23	
	Moss Glen	10,200	1,924 47							116,270	20,081 83	
Northumberland	Westfield.	1,300	382 19							10,200	1,924 47	
	Glenwood whf.									1,300	382 19	
	Shamper's "					28,600	2,417 77			28,600	2,417 77	
	Jenkin's Cove whf.									4,700	708 07	
Queens.	Cedars			35,420 72						13,650	1,720 64	41,549 56
	Horse Shoe, Miramichi	208,892	55,058 37							15,750	1,287 35	
	Ontar Bar	29,935	7,965 31							208,892	55,058 36	
	Grand Dune	37,975	10,121 67							29,935	7,965 31	
Grimross, Mid. ground	Gordon Flats	22,425	4,403 85							37,975	10,121 67	
	Negusac.	6,300	6,989 76	84,519 06						22,425	4,403 85	
	Grand Lake.	215,232	30,085 41							6,300	6,989 76	
	" McNair's Cove.	20,440	4,522 82							215,232	30,085 41	
Grimross, Mid. ground	Jemseg	87,230	17,190 06							20,440	4,522 82	
	Washademoak	65,675	8,073 65							87,230	17,190 06	
	" Cambridge whf.	2,900	1,073 31							65,675	8,073 65	
	" Ackery's "	4,840	995 20							2,900	1,073 31	
Grimross, Mid. ground	" Heutis "	270	212 72							4,840	995 20	
	" Webster's "	5,000	764 58							270	212 72	
	" Robertson's "	7,500	422 14							5,000	764 58	
	"	12,040	3,274 99							7,500	422 14	
Grimross, Mid. ground	"									12,040	3,274 99	
	"											
	"											
	"											

6-7 EDWARD VII., A. 1907

EXPENDITURE for dredging in New Brunswick for the thirty-four years ended 30th June, 1906—*Concluded.*

County.	Locality.	TOTAL FOR THE THIRTY-THREE YEARS ENDED JUNE 30, 1905.				FOR THE YEAR 1905 1906.				Total Quantity.	Total Cost.	Cost for each County.
		Quantity.		Cost. for County.		Quantity.		Cost. for County.				
		Cubic yards.	\$ cts.	\$ cts.	\$ cts.	Cubic yard.	\$ cts.	\$ cts.	\$ cts.			
Queen's.....	Gagetown Creek Canal.....	45,935	7,739 97							45,935	7,739 97	
	Spoon Island.....	3,000	402 51							9,315	1,192 36	
	Ward's Shoal, Salmon River.....	46,625	4,493 59			6,315	789 85			46,625	4,593 59	
	Curley Shoal.....	36,625	3,369 16							36,625	3,369 16	
	Chipman & Brigg's Corner.....	104,275	12,269 49							104,275	12,269 49	
	Upper Gagetown Wharf.....	1,700	1,104 90							1,700	1,104 90	
	McClure Shoal.....	39,525	4,556 66							39,525	4,556 66	
	Queens Coal Co., Newcastle.....	14,475	1,335 06	101,986 22						14,475	1,335 06	
	Dalhousie.....	22,301	6,543 08							22,301	6,543 08	
	" McManus Conct.....					13,336	1,825 67			13,336	1,825 67	
Restigouche.....	" Railway whf.....					8,480	1,203 48			8,480	1,203 48	
	" Ferry Landing.....					12,992	3,832 33			12,992	3,832 33	
	" Hillyards.....					3,850	1,277 78			3,850	1,277 78	
	Traverse.....	118,860	22,980 63							118,860	22,980 63	
	" Oak Point.....					2,100	1,020 58			2,100	1,020 58	
	Campbellton, Govt. wharf.....											
	Campbellton Conct.....	1,750	620 96							1,750	620 96	
	I. C. Ry. terminus.....	210,492	51,885 40		30,144 67	9,800	2,254 11		11,213 95	212,242	52,663 18	
	Navy Island.....	25,294	9,296 79			1,750	747 78			25,994	9,296 79	
	Marble Cove.....	29,925	4,374 40							29,925	4,374 40	
St. John	Murray Mills.....	27,555	3,681 41							27,555	3,681 41	
	Indian town whf.....	1,615	192 83							1,615	192 83	
	Long.....	7,137	2,980 54							7,137	2,980 54	
	Miller & Woodman.....	9,275	1,090 42							9,275	1,090 42	
	Hayford & Stetson.....	8,015	942 23							8,015	942 23	
	Indian town whf.....	450	52 90							450	52 90	
	Adams.....	7,315	3,247 29							7,315	3,247 29	
	Anchor Line ".....	4,695	396 81							4,695	396 81	
	Dominion Atlantic.....	15,525	4,484 72							15,525	4,484 72	
	St. John, Winter Berths.....	398,513	73,403 48			40,990	8,047 68			439,503	81,451 16	
St. John	St. John Harbour Channel.....	3,413	5,063 92							3,413	5,063 92	
	Purves & Murchin Mill.....	675	142 57							675	142 57	
	McAvery whf.....	4,110	606 88							4,110	606 88	
	Lawton's ".....	570	101 46							570	101 46	
											102,776 07	
											41,358 62	

SESSIONAL PAPER No. 19

Thorne	1,980	249 02	1,980	249 02	1,980	249 02
Maritime Nail Co. whf	1,425	224 52	1,425	224 52	1,425	224 52
Cushing's Mills	20,850	1,222 86	20,850	1,222 86	20,850	1,222 86
Hillyard Bros	1,400	314 10	1,400	314 10	1,400	314 10
Kennebecasis River	2,025	604 37	2,025	604 37	2,025	604 37
Patridge Island	4,475	2,227 59	4,475	2,227 59	4,475	2,227 59
" Channel for water pipe	395,447	66,427 58	395,447	66,427 58	395,447	66,427 58
Oromocto	625	181 59	625	181 59	625	181 59
McLean Wharf	51,800	5,266 50	51,800	5,266 50	51,800	5,266 50
Ox Island	25,475	3,787 49	25,475	3,787 49	25,475	3,787 49
French Lake	2,310	428 44	2,310	428 44	2,310	428 44
Bent's Wharf, Mangerville	3,830	425 15	3,830	425 15	3,830	425 15
Upper Sheffield	182,980	42,162 18	182,980	42,162 18	182,980	42,162 18
Point du Chene	35,120	9,004 92	35,120	9,004 92	35,120	9,004 92
Cape Tormentine	126,365	21,679 06	126,365	21,679 06	126,365	21,679 06
Frederickton	15,570	6,827 36	15,570	6,827 36	15,570	6,827 36
St. Mary's Ferry	30,395	4,379 52	30,395	4,379 52	30,395	4,379 52
Gibson	1,600	435 22	1,600	435 22	1,600	435 22
Naushwaak	8,200	1,547 12	8,200	1,547 12	8,200	1,547 12
Fisher & Chestnut Shoals	3,970	1,013 98	3,970	1,013 98	3,970	1,013 98
Canada Eastern Railway Whfs	96,290	24,386 78	96,290	24,386 78	96,290	24,386 78
Springhill, Chappel & Russel	6,965	1,717 16	6,965	1,717 16	6,965	1,717 16
Bara	14,235	1,512 87	14,235	1,512 87	14,235	1,512 87
Robinson's Bar	1,591 12	1,591 12	1,591 12	1,591 12	1,591 12	1,591 12
Douglas Booms	3,5706,99	737,929 16	3,5706,99	737,929 16	3,5706,99	737,929 16
" New Brunswick " equipment	224,038	727,929 16	224,038	727,929 16	224,038	727,929 16
Totals	3,794,757	49,230 59	3,794,757	49,230 59	3,794,757	49,230 59
Sunbury	187,122 18	187,122 18	187,122 18	187,122 18	187,122 18	187,122 18
Westmorland	76,516 75	76,516 75	76,516 75	76,516 75	76,516 75	76,516 75
York	51,167 10	51,167 10	51,167 10	51,167 10	51,167 10	51,167 10

6-7 EDWARD VII., A. 1907

EXPENDITURE for dredging in Prince Edward Island for the thirty-four years ended 30th June, 1906.

County.	Locality.	TOTAL FOR THE THIRTY-THREE YEARS ENDED 30TH JUNE, 1905.			FOR THE YEAR 1906-1906.			Total Quantity.	Total Cost.	Cost for each County
		Quantity.	Cost.	Cost for County.	Quantity.	Cost.	Cost for County.			
		Cubic yards.	\$ cts.	\$ cts.	Cubic yards.	\$ cts.	\$ cts.	Cubic yards.	\$ cts.	\$ cts.
Kings	Grand River.....	76,170	15,304 04					76,170	15,304 04	
	Montague River.....	182,295	36,547 47					182,295	36,547 47	
	Murray Harbour, South.....	101,253	18,147 03					101,253	18,147 03	
	Sturgeon.....	16,026	6,066 27					16,026	6,066 27	
	St. Mary's Wharf.....	21,963	4,752 56					21,963	4,752 56	
	Georgetown Ry. Wharf.....	1,002	408 32					1,002	408 32	
	Queen's Wharf.....	2,205	1,328 80					2,205	1,328 80	
	Cardigan Bridge.....	35,955	8,619 86					35,955	8,619 86	
	Newport.....	3,240	917 82					3,240	917 82	
	Souris.....	3,825	1,083 53					3,825	1,083 53	
	Murray River.....	41,062	11,433 61		2,385	551 88		43,447	11,985 49	
	" Railway.....	5,926	1,860 30					5,926	1,860 30	
	Morrell.....	43,335	11,972 59	118,411 69			551 88	43,335	11,972 59	118,993 57
Queen's	Charlottetown Ry. Wharf.....	86,151	22,162 30		30,555	8,156 01		116,706	30,318 31	
	" Pownal.....	14,193	2,963 50		9,517	2,250 78		23,710	4,944 28	
	" Ferry.....	10,075	2,006 99					10,075	2,006 99	
	" Steam Nav. Co.	13,113	5,491 77					13,113	5,491 77	
	" Connolly Wharf.....	9,978	4,409 68					9,978	4,409 68	
	" Peake Bros.....	12,195	5,362 42					13,995	5,856 02	
	" Queen St. Slip.....	3,915	1,109 03					3,915	1,109 03	
	" Geo. Peake Whf.....	5,805	1,644 42					6,885	2,232 03	
	" Poole.....	12,240	1,609 95		1,080	587 61		12,240	1,609 95	
	" McMillan.....	6,165	1,320 13					6,165	1,320 13	
	" Dom. Building.....									
	" Sewer.....	5,355	1,146 68					5,355	1,146 68	
	" Public Sewerage.....	2,880	679 12					2,880	679 12	
	" Geo. E. Fall's Wharf.....				11,520	3,001 96		11,520	3,001 96	
	" Carvel Bros. Wf.....				2,880	798 04		2,880	798 04	
Webster's Corner, East River.....	203	43 47					203	43 47		
Crapaud, Victoria.....	118,040	34,574 90					118,040	34,574 90		
Pownal Bay.....	83,610	6,586 20					83,610	6,586 20		
Rock Point.....	82,920	13,426 13					82,920	13,426 13		

SESSIONAL PAPER No. 19

Vernon River.....	25,240	8,292 56	1,800 12	945	1,800 12	25,240	8,292 56
Wood Islands.....	9,350	11,801 57				9,350	11,801 57
Nine Mile Creek.....	31,650	6,286 46				31,650	6,286 46
Hickey Wharf.....	750	150 51				750	150 51
Carr's Point.....	12,165	2,441 28				12,165	2,441 28
Pinette.....	3,825	756 24				3,825	756 24
Fort Augustus.....	3,195	631 68				3,195	631 68
Southport Ferry.....	45,300	7,508 75				45,300	7,508 75
Red Point.....	7,161	3,879 60				7,161	3,879 60
North Rustico.....	13,536	4,775 38				13,536	4,775 38
South Rustico.....	11,649	4,109 67				11,649	4,109 67
Gauthier's Creek.....	17,847	8,305 50				17,847	8,305 50
Malpeque.....	28,575	3,483 32				28,575	3,483 32
French River.....	41,671	13,311 46				41,671	13,311 46
Bay View.....	4,095	1,912 87				4,095	1,912 87
Wedlocks.....	1,260	520 48				1,260	520 48
Belfast, Halliday's Wharf.....	15,435	4,468 78	17,138 08			15,435	4,468 78
Summerside.....	91,571	28,082 51				91,571	28,082 51
Hurds Point Pier.....	65,505	14,315 47				65,505	14,315 47
Tignish.....	11,387	13,006 45				11,387	13,006 45
Cascumpec.....	1,157	538 42				1,157	538 42
Cape Traverse.....	16,740	5,105 89				16,740	5,105 89
Holman's Wharf.....	9,585	1,269 21				9,585	1,269 21
Totals.....	1,418,801	365,981 35	17,689 96	60,682	17,689 96	1,479,483	383,671 31
Prince.....							

EXPENDITURE for dredging in Quebec for the thirty-four years ended 30th June, 1906.

From appropriations Maritime Provinces.

Magdalen Islands, Gaspé Co.	6,800	2,392 92				6,800	2,392 92
Magdalen Islands, Gaspé Co.	495	242 05				495	242 05
Amherst Harbour.....	2,587	825 47				2,587	825 47
River du Loup.....	8,123	3,997 59				8,123	3,997 59
Rimouski.....							
Totals.....	18,005	7,458 03	Nil	Nil	Nil	18,005	7,458 03

6-7 EDWARD VII., A. 1907

STATEMENT OF Dredging, showing Quantities Removed in each Province, and Cost of each Work for the Thirty-four Years ended June 30, 1906.

Fiscal Year.	NEW BRUNSWICK.		NOVA SCOTIA.		QUEBEC.		PRINCE EDWARD ISLAND.		Total Quantity, Cubic Yards.	Total Expenditure.	Cost per Cubic Yard.
	Quantity.	Cost. \$ cts.	Quantity.	Cost. \$ cts.	Quantity.	Cost. \$ cts.	Quantity.	Cost. \$ cts.			
1872-3.....	38,000	13,240 50	23,260	8,422 70	6,800	2,392 92	18,655	9,892 89	61,320	21,663 20	0. 35 328
1873-4.....	57,725	14,395 57	18,600	6,545 61			58,283	10,891 80	83,125	23,334 10	0. 28 71
1874-5.....	78,223	17,325 05	24,416	13,238 83			74,460	12,758 27	121,204	40,456 77	0. 33 354
1875-6.....	79,935	17,040 52	91,974	21,885 90			82,850	12,011 18	230,192	49,818 22	0. 21 642
1876-7.....	97,690	23,161 90	127,785	34,846 74			46,490	9,164 07	299,935	70,766 91	0. 23 594
1877-8.....	81,070	23,323 92	106,857	29,507 94			36,390	12,674 98	270,787	64,943 04	0. 23 983
1878-9.....	132,555	27,400 22	116,307	28,267 59			68,355	11,080 37	295,332	64,831 88	0. 21 951
1879-1880.....	63,540	15,661 79	127,684	34,765 84	765	374 08	47,325	9,356 57	228,379	64,396 69	0. 28 197
1880-1.....	44,315	12,385 85	87,118	23,061 64	2,317	693 44	9,248 53	9,248 53	216,531	61,347 15	0. 28 332
1881-2.....	79,640	18,626 87	89,566	33,363 71			79,750	13,353 05	180,085	45,439 46	0. 25 232
1882-3.....	48,565	13,422 70	143,616	42,996 93			55,075	8,668 01	290,716	67,500 00	0. 25 890
1883-4.....	47,038	17,103 38	157,560	49,050 58	8,123	3,997 59	17,137	10,349 56	284,368	79,509 01	0. 27 959
1884-5.....	128,997	24,460 35	76,164	23,250 73			3,775	5,899 90	208,359	62,376 68	0. 23 242
1885-6.....	68,505	14,874 63	56,790	21,482 05			6,137	6,214 74	142,432	46,706 34	0. 32 753
1886-7.....	69,440	11,452 86	53,400	25,261 19			24,240	15,502 95	128,977	43,288 79	0. 33 556
1887-8.....	50,152	9,252 50	84,175	29,847 60			31,422	11,085 89	138,102	45,000 00	0. 32 58
1888-9.....	63,633	16,508 08	56,910	32,697 00			19,004	8,843 92	144,783	64,798 03	0. 27 29
1889-1890.....	86,068	20,544 93	59,783	22,821 53			31,422	11,085 89	177,273	54,451 87	0. 30 71
1890-1.....	96,588	20,375 06	61,698	24,386 57			19,004	8,843 92	177,290	53,605 55	0. 30 23
1891-2.....	75,023	20,592 85	81,933	27,376 08			66,585	15,112 83	188,398	60,757 27	0. 32 249
1892-3.....	108,066	23,742 26	40,884	18,125 58			61,636	12,269 24	215,454	56,980 67	0. 26 44
1893-4.....	77,505	21,564 27	59,581	28,664 99			48,060	10,429 80	198,622	62,498 50	0. 31 46
1894-5.....	59,715	13,630 11	105,463	32,202 70			36,360	10,299 93	213,238	56,261 71	0. 26 38
1895-6.....	89,905	21,362 63	86,428	15,828 89			51,078	10,937 62	171,693	47,481 45	0. 27 65
1896-7.....	203,975	34,060 86	84,735	22,080 46			46,710	10,701 48	339,788	67,068 94	0. 19 73
1897-8.....	187,326	27,611 17	147,065	31,497 57			61,040	13,283 71	381,120	69,810 23	0. 18 31
1898-9.....	105,088	23,315 82	155,510	36,628 81			94,364	17,637 73	311,608	73,228 34	0. 23 50
1899-1900.....	175,985	28,232 46	162,033	37,589 22			51,020	16,196 95	422,332	83,359 41	0. 19 76
1900-1.....	206,369	32,615 29	94,557	36,141 17			51,020	16,196 95	325,946	87,740 59	0. 26 91
1901-2.....	218,210	28,508 25	143,142	38,247 35			49,500	13,775 87	405,682	85,952 57	0. 20 69
1902-3.....	197,207	36,195 40	134,648	32,866 93			60,683	11,089 96	387,798	90,212 65	0. 21 97
1903-4.....	262,725	53,046 12	94,675	34,171 45			60,683	11,089 96	396,900	100,992 94	0. 25 44
1904-5.....	193,955	45,348 89	203,460	33,349 47			60,683	11,089 96	430,445	96,832 18	0. 22 49
1905-6.....	224,058	32,549 89	271,637	36,111 20			60,683	11,089 96	556,377	120,072 24	0. 21 58
Totals.....	3,793,750	774,923 67	3,369,444	970,042 57	18,005	7,458 03	1,479,484	383,738 03	8,654,701	2,176,484 09	0. 25 14

SESSIONAL PAPER No. 19

STATEMENT of Dredging showing Quantities Removed by Hand in each Province and Cost of each Dredging for the Thirty-four Years ended June 30, 1906.

Fiscal Year.	NEW BRUNSWICK.		NOVA SCOTIA.		QUEBEC.		PRINCE EDWARD ISLAND.		Total Quantity, Cubic Yard.	Total Expenditure.	Cost per Cubic Yard.
	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.			
1878-9		\$ cts.		\$ cts.		\$ cts.		\$ cts.		\$ cts.	\$ cts.
1879-1880		245	245	553 13					245	553 13	2. 28 58
1880-1		12,370	12,370	3,666 90					12,370	3,666 90	0. 29 64
1881-2		11,140	11,140	2,560 25					11,140	2,560 25	0. 22 96
1882-3		10,640	10,640	2,650 00					10,640	2,650 00	0. 24 90
1883-4		8,190	8,190	2,500 00					8,190	2,500 00	0. 30 52
1884-5		6,460	6,460	2,500 00					5,400	2,500 00	0. 45 78
1885-1900		343	343	248 71					343	248 71	0. 72 51
1900-1		320	320	250 75					320	250 75	0. 78 35
1902-3		1,645	1,645	496 38					1,645	496 38	0. 30 17
Totals		50,353	50,353	15,428 12					50,353	15,428 12	0. 30 64

6-7 EDWARD VII., A. 1907

STATEMENT of dredging in the Maritime Provinces showing quantities removed by and expenditure of each dredge during the thirty-four years ended June 30, 1906.

Dredge.	TOTAL QUANTITIES AND COST FOR THIRTY-THREE YEARS' ENDED JUNE 30, 1905.				1905-1906.				TOTAL FOR THIRTY-FOUR YEARS ENDED JUNE 30, 1906.			
	Total Quantity.	Cost.	Per cubic yard.		Quantity.	Cost.	Per cubic yard.		Total Quantity.	Total cost.	Cost per cubic yard.	
			\$	cts.			\$	cts.			\$	cts.
St. Lawrence.....	1,029,831	414,413 17	0.	25 42	55,788	12,885 26	0.	23 09	1,685,619	427,298 43	0.	25 35
Canada.....	1,060,844	332,109 59	0.	31 60	51,745	13,546 02	0.	26 17	1,102,589	345,656 01	0.	31 34
New Dominion.....	1,733,902	298,760 90	0.	17 23	64,185	15,451 96	0.	24 07	1,798,087	314,212 86	0.	17 47
Prince Edward.....	1,382,441	365,189 20	0.	26 41	60,682	17,689 96	0.	29 15	1,443,123	382,879 25	0.	26 53
(Old) Cape Breton.....	534,938	139,074 83	0.	25 99	.....	.....	.....	.....	534,938	139,074 83	0.	25 99
Geo. McKenzie.....	734,916	308,031 19	0.	41 91	42,887	15,991 81	0.	37 29	777,802	324,023 00	0.	41 66
Cape Breton.....	726,880	124,184 14	0.	17 08	126,770	17,362 62	0.	13 69	853,650	141,546 76	0.	16 58
New Brunswick.....	292,665	68,151 25	0.	23 28	70,880	11,188 04	0.	15 78	363,545	79,339 29	0.	21 82
W. S. Fielding.....	.....	.....	.....	.....	83,440	15,966 57	0.	19 12	83,440	15,966 57	0.	19 12
	8,086,416	2,049,914 26	0.	25 35	556,377	120,072 24	0.	21 58	8,642,793	2,169,986 50	0.	25 11

STATEMENT of dredging performed by hand in the Maritime Provinces, showing quantities removed and expenditure at each locality for thirty-four years ended June 30, 1906.

Locality.	TOTAL QUANTITIES AND COST FOR THIRTY-THREE YEARS ENDED JUNE 30, 1905.				1905-1906.				TOTAL QUANTITIES AND COST FOR THIRTY-FOUR YEARS ENDED JUNE 30, 1906.			
	Total Quantity.	Cost.	Per cubic yard.		Quantity.	Cost.	Per cubic yard.		Total Quantity.	Total cost.	Cost per cubic yard.	
			\$	cts.			\$	cts.			\$	cts.
Parrboro, N.S.....	42,595	12,804 68	0.	30 06	.....	.....	.....	.....	42,595	12,804 68	0.	30 06
Windsor, N.S.....	5,450	1,627 60	0.	29 86	.....	.....	.....	.....	5,450	1,627 60	0.	29 86
Milton, N.S.....	663	499 46	0.	75 83	.....	.....	.....	.....	663	499 46	0.	75 83
Racquette, N.S.....	1,645	496 38	0.	30 17	.....	.....	.....	.....	1,645	496 38	0.	30 17
	50,353	15,428 12	0.	30 64	.....	.....	.....	.....	50,353	15,428 12	0.	30 64

SESSIONAL PAPER No. 19

Costs at localities dredged during the year ending 30th June, 1906.

DREDGE 'ST. LAWRENCE.'

Locality.	Date.	Actual Dredging Time.	Quantity.	Cost.	Cost per Cubic Yard.
		Hrs. Min.	C. yds.	\$ cts.	\$ cts.
Campbellton (contract) Restigouche Co., N. B.	July 3 to 25, 1905.	84 05	9,800	1,004 30	0 10 24
Traverse (Oak Point)	July 25 to August 3, 1905	10 25	2,100	454 71	0 21 17
Dalhousie (McManus)	August 4 to 24, 1905	84 25	13,836	813 41	0 06 09
" (Railway wharf)	August 25 to September 6, 1905.	41 45	8,460	536 20	0 06 33
" (Ferry landing)	September 7 to October 15, 1905.	67 05	12,992	1,618 35	0 12 45
" Hillyards	October 16 to 20 and 24 and 25, 1905.	23 10	3,850	569 30	0 14 78
Market wharf, Pictou, Pictou Co., N. S.	November 22 to 26, 1905.	3 20	1,400	157 47	0 11 24
Railway wharf " " "	November 27 to December 12, 1905.	19 35	3,850	587 15	0 15 25

DREDGE 'CANADA.'

Lockeport, Shelburne Co., N. S.	July 1 to 15 and August 15 to September 28, 1905.	163 40	13,770	2,021 06	0 14 67
Shelburne,	July 16 to August 14, 1905.	43 01	1,800	882 27	0 49 57
Mahone Bay, Lunenburg Co., N. S.	September 30 to December 22 and April 19 to June 22, 1905	377 30	35,175	6,024 55	0 16 55

DREDGE 'NEW DOMINION.'

Winter Bertha, St. John, St. John Co., N. B.	July 1 to October 8, 1905	622 30	32,950	4,285 93	0 13 07
West Channel for water pipe.	October 5 to Dec. 6 and 8 to Dec. 12, 1905.	151 45	8,140	3,097 54	0 38 05
Partridge Island, St. John Co., N. B.	December 7, 1905	3 00	175	52 09	0 29 76
St. Andrews, Charlotte Co., N. B.	April 20 to June 30, 1906	359 15	22,920	4,444 90	0 19 39

6-7 EDWARD VII., A. 1907

Cost at localities dredged during the year ending 30th June, 1906.

DREDGE 'PRINCE EDWARD.

Locality.	Date.	Actual Dredging Time.	Quantity.	Cost.	Cost per Cubic Yard.
		Hrs. Min.	C. yds.	\$ cts.	\$ cts.
Murray River. Kings Co., P. E. I.	July 1 to 7, 1905.	42 00	2,365	345 97	0 14.51
Wood Islands, Queens Co., P. E. I.	July 8 to 27, 1905.	32 00	945	1,159 85	1 22.73
Charlottetown, Railway Wharf, P. E. I.	July 28 to August 10, and August 17 to Nov. 6, May 5 to 8, June 23 to 30, 1905.	590 50	30,555	5,113 06	0 16.73
" Peake Bros., P. E. I.	August 11 to 16, 1905.	41 40	1,800	309 42	0 11.63
" Fownal & Plant, Line Wharf, P. E. I.	November 7 to December 5, 1905.	187 40	9,517	1,411 03	0 14.82
" Arthur Peake's Wharf, P. E. I.	April 27 to May 4, 1906.	43 00	1,080	368 38	0 34.10
" Geo. E. Full's Wharf, P. E. I.	May 9 to June 12, 1906.	205 00	11,520	1,881 95	0 16.34
" Carvell Bros.' Wharf.	June 13 to 22, 1906.	44 15	2,880	500 30	0 17.37

DREDGE 'GEO. MCKENZIE.'

Shippagan, Gloucester Co., N. B.	July 1 to Nov. 13, 1905.	608 30	38,455	8,493 46	0 22.08
Malou, Bar & Channel, Inverness Co., N. S.	May 13 to June 30, 1906.	112 00	4,432	3,415 55	0 77.76

DREDGE 'CAPE BRETON.'

North Sydney, Ingraham's whf. C. B. Co., N. S.	July 3, 1905.	6 00	315	55 47	0 14.43
" Salter's " " "	July 4 and 5, 1905.	10 30	1,260	70 97	0 07.63
Mabou Bar & Channel, Inverness Co., N. S.	July 6 to Oct. 3 & Nov. 7 to 15, 1905.	264 45	59,430	5,003 14	0 08.41
" Government whf. " "	Oct. 4 to Nov. 6 & Nov. 16 to 23, 1905.	209 35	47,565	2,022 04	0 04.25
Railway whf. Pictou, Pictou Co., " "	May 19 to June 19, 1906.	114 00	18,200	2,971 96	0 16.33

SESSIONAL PAPER No. 19

DREDGE 'NEW BRUNSWICK.'

Winter Berths, St. John, St. John Co., N. B.	July 1 to Aug. 1, 1905.	185 30	8,040	1,440 98	0 17.92
Spoon Island, Queens Co., N. B.	Aug. 8 to 19, 1905.	97 00	6,315	492 76	0 07.80
Glenwood whf., Kings Co.	Aug. 20 to Sept. 27, 1905.	266 00	20,600	1,508 26	0 07.30
Shamper's wharf, " "	Sept. 28 to Oct. 10, 1905.	96 00	4,700	438 62	0 09.33
Jenkin's Cove whf. " "	Oct. 11 to Nov. 8, 1905.	203 30	13,650	1,073 44	0 07.86
Cedars whf. " "	Nov. 9 to 15 & June 6 to 30, 1906.	226 30	15,750	803 13	0 05.09
West Channel for water pipe, St. John, St. John Co., N. B.	Nov. 27 to Dec. 12, 1906.	2 30	75	755 99	10 07.98
Intercolonial Rly. whf. St. John, St. John Co., N. B.	May 11 to 25, 1906.	43 30	1,750	466 52	0 26.65

19-iv-15

DREDGE 'W. S. FIELDING.'

Yarmouth, Yarmouth Co., N. S.	Oct. 25 to Dec. 30 & Apl. 9 to June 30, '06	195 13	83,440	12,859 53	0 15.41
-------------------------------	---	--------	--------	-----------	---------

6-7 EDWARD VII., A. 1907

COST AT LOCALITIES DREDGED IN MARITIME PROVINCES.
During the Fiscal Year ended June 30, 1906.

Dredge.	Locality.	Date.	Time Dredging.		Quantity.	Cost.	Cost per Cubic Yard.
			Hrs.	Min.	C. yds.	\$ cts.	\$ cts.
St. Lawrence.	Campbellton (contract), Restigouche Co., N.B.	July 3 to 25, 1905.	84	05	9,800	1,004 30	0 10 24
	Traverse (Oak Point), "	July 25 to Aug. 3, 1905.	10	25	2,100	454 71	0 21 17
	Dalhousie (McManus), "	Aug. 4 to 24, 1905.	84	25	13,836	813 41	0 06 09
Canada	" (Railway Whf.), "	Aug. 25 to Sept. 6, 1905.	41	45	8,460	536 20	0 06 33
	" (Ferry Landing), "	Sept. 7 to Oct. 15, 1905.	67	05	12,922	1,618 35	0 12 45
	" (Hillyards), "	Oct. 16 to 20 and 24 and 25, 1905.	23	10	3,850	569 30	0 14 78
	Market wharf, Pictou, Pictou Co., N.S.	Nov. 22 to 26, 1905.	19	35	1,400	187 47	0 11 24
	Railway " Pictou "	Nov. 1 to 15 and Aug. 15 to Sept. 23, 1905.	163	40	13,770	2,027 08	0 15 25
	Lockport, Shelburne Co., "	July 16 to Aug. 14, 1905.	43	01	1,900	892 27	0 14 67
New Dominion.	Mahone Bay, Lunenburg Co., "	Sept. 30 to Dec. 22 '05 and Apr. 19 to June 22 '06	377	30	36,175	6,024 56	0 16 65
	Winter Berths, St. John, St. John Co., N.B.	July 1 to Oct. 3, 1905.	622	30	32,950	4,285 93	0 13 007
	West Channel for water pipe "	Oct. 5 to Dec. 6 and Dec. 8 to 12, 1905.	151	45	8,140	3,097 54	0 38 06
	Partridge Island "	Dec. 7, 1905.	3	00	175	52 09	0 29 76
Prince Edward.	St. Andrews, Charlotte Co., "	April 20 to June 30, 1906.	359	15	22,920	4,444 90	0 19 39
	Murray River, Kings Co., P.E.I.	July 1 to 7, 1905.	42	00	2,334	345 97	0 14 51
	Wood Islands, Queens Co., "	July 8 to 27, 1905.	32	00	945	1,159 85	1 22 73
	Charlottetown, Railway wharf, Queens Co., P.E.I.	July 28 to Aug. 10, Aug. 17 to Nov. 6, 1905, May 5 to 8 and June 23 to 30, 1906.	590	50	30,555	5,113 06	0 16 73
Geo. McKenzie.	" Peake Bros., "	Aug. 11 to 16, 1905.	41	40	1,500	309 42	0 11 63
	Pownal & Plant Line Wharf, "	Nov. 7 to Dec. 5, 1905.	187	40	9,517	1,411 08	0 14 82
	Charlottetown, "	Apl. 27 to May 4, 1906.	48	00	1,080	368 38	0 34 10
	" Arthur Peake's whf. "	May 9 to June 12, 1906.	207	00	11,620	1,881 95	0 16 34
Cape Breton	" Geo. E. Full's "	June 13 to 22, 1906.	44	15	2,880	500 30	0 17 37
	" Carvell Bros. "	July 1 to Nov. 13, 1905.	608	30	38,455	8,493 46	0 22 08
	Shippegan, Gloucester Co., N.B.	May 13 to June 30, 1906.	112	00	4,432	3,445 55	0 77 76
	Mabou Bar & Channel, Inverness Co., N.S.	July 3, 1905.	6	00	815	55 47	0 14 43
Cape Breton	North Sydney, Ingraham's wharf, C.B. Co., N.S.	July 4 and 5, 1905.	10	30	1,240	70 97	0 06 63
	" Salter's "	July 6 to Oct. 3 and Nov. 7 to 15, 1905.	264	45	59,430	5,003 14	0 08 41
	Mabou Bar & Channel, Inverness Co., "	Oct. 4 to Nov. 6 and Nov. 16 to 22 1905	209	35	47,565	2,022 04	0 04 26
	" Government whf. "	May 19 to June 19, 1906.	114	00	18,200	2,971 96	0 16 33

SESSIONAL PAPER No. 19

185	30	8,040	1,440 98	0 17 92
97	00	6,315	492 76	0 07 80
266	00	20,800	1,508 26	0 07 80
96	00	4,700	438 62	0 09 33
203	30	13,850	1,073 44	0 07 86
228	30	15,750	803 13	0 06 09
2	30	75	755 99	10 07 98
43	30	1,750	466 52	0 28 65
195	13	83,440	13,859 53	0 15 41

Winter Beach, St. John, St. John Co., N.B.
 Island, St. John, St. John Co., N.B.
 Glenwood wharf, Kings Co., " "
 Shampers " " "
 Jonkin's Cove wharf " " "
 Cedars wharf " " "
 West Channel for water pipe, St. John, St. John Co., N.B.
 Intercolonial Railway wharf, St. John, St. John Co., N.B.
 Yarmouth, Yarmouth Co., N.S.

July 1 to Aug. 1, 1905.
 Aug. 8 to 12, 1905.
 Aug. 30 to Sept. 27, 1905.
 Sept. 28 to Oct. 10, 1905.
 Oct. 11 to Nov. 8, 1905.
 Nov. 9 to 15, 1905 and June 6 to 30, 1906.
 Nov. 27 to Dec. 12, 1905.
 May 11 to 25, 1906.
 Oct. 25 to Dec. 30, '06 and Apr. 9 to June 30 '06.

New Brunswick.

10-iv-151

W. S. Fielding..

6-7 EDWARD VII., A. 1907

PROVINCE OF QUEBEC.

DREDGING AT BERTHIER EN BAS.

Dredge *No. 6* worked at this place from September 4 to October 7, 1905, deepening in front and on both sides of the wharf. 1,160 cubic yards of clay and silt were removed.

Between July 1 and 8, 1905, the dredge *Nithsdale* also worked at this place doing the same work as the above dredge, and deepening the channel to 9 feet at low water. 2,100 cubic yards of clay and stones were removed.

DREDGING AT CHAMBLY.

The dredge *Richelieu* worked at this place between June 1 and 30, 1906, the end of the fiscal year. Six cuts were made on both sides and in front of wharf, 330, 330, 200, 200, 330 and 200 feet long, respectively, 20 feet wide and 8 feet deep at low water. 7,500 cubic yards of clay, boulders, sand and hardpan were removed.

DREDGING AT CHICOUTIMI.

From July 1 to October 28, 1905, the dredge *International* worked at this place, making a channel into the basin to a depth of 10 feet at low water. 62,500 cubic yards of hardpan, clay and boulders were removed.

DREDGING AT ILE AUX NOIX.

The dredge *Richelieu* worked at this place from September 4 to November 28, 1905, the close of navigation. The work consisted in deepening in front of the village wharf, widening the channel at the foot of the island and making a depth of 8½ feet at low water. 17,700 cubic yards of clay and sand were removed.

DREDGING AT ILE AUX MORPHIONS.

The dredge *St. Maurice* worked at this place between August 25 and 30, 1905, deepening the channel to 7 feet at low water. The material removed was 1,939 cubic yards of sand.

DREDGING AT ISLAND OF ORLEANS.

The dredge *Progress* worked at this place between June 20 and 23, 1906, the close of the fiscal year. The work consisted of dredging a basin on the western side of wharf. The quantity of material removed was 300 cubic yards of hardpan.

DREDGING AT LÉVIS.

From July 1 to August 19, 1905, the dredge *No. 6* worked at this place deepening the channel to 14 feet at low water, at entrance to dry dock. The quantity of material removed was 6,240 cubic yards of silt.

DREDGING AT LES EBOULEMENTS.

Between July 22 and August 12, 1905, the dredge *Nithsdale* worked at this place, making two cuts 250 feet long and 15 feet deep in front of the wharf. 3,050 cubic yards of clay, sand and stones were removed.

SESSIONAL PAPER No. 19

DREDGING AT MONTMAGNY.

Between July 9 and 15, 1905, the dredge *Nithsdale* worked at this place in front of the wharfs, deepening the channel to 9 feet at low water. The material removed was 350 cubic yards of mud.

DREDGING AT MEKINAC.

Between August 1 and 9, 1905, the dredge *St. Maurice* worked at this place, deepening the channel to 7 feet at low water. Three thousand four hundred and seventy-eight cubic yards of sand and boulders were removed.

DREDGING AT NOTRE DAME DE PIERREVILLE.

From July 1 to September 16, 1905, the dredge *St. Louis* worked at this place, deepening the channel near Ile St. Joseph to a depth of 8 feet at low water. 13,086 cubic yards of sand were removed.

DREDGING AT POINT À DORE.

From August 11 to October 28, 1905, the dredge *St. Maurice* worked at this place, deepening the channel to 7 feet at low water. 3,353 cubic yards of sand and boulders were removed.

DREDGING AT QUEBEC.

From July 1 to November 20, 1905, the close of navigation, the dredge *Progress* worked at this place for Dussault & Lemieux, dredging material for back filling, outside the harbour in close proximity to the new cribwork. 62,080 cubic yards of sand and boulders were removed.

This same work was continued by the dredge *International* between June 18 and 30, 1906, the close of the fiscal year. 2,000 cubic yards of sand, boulders and hardpan were removed.

DREDGING AT RIMOUSKI.

From August 14 to November 16, 1905, the close of navigation, the dredge *Nithsdale* worked at this place. Work consisted in deepening the inner basin, and at the end of wharf several sunken cribs were also taken up. 11,970 cubic yards of sand and stones were removed.

Dredging was continued at this place by the same dredge between June 20 and 30, 1906, the end of the fiscal year. Making one cut in front of the wharf, 770 cubic yards of sand and stones were removed.

DREDGING AT RIVER OUELLE.

Between June 25 and 30, 1906, the close of the fiscal year, the dredge *Progress* worked at this place deepening the channel at the mouth of the river. 400 cubic yards of sand and clay were removed.

DREDGING AT STE. BLAISE.

Between July 29 and September 2, 1905, the dredge *Richelieu* worked at this place, in front of the wharf in the main channel and on the flats opposite Ryan's wharf, making a depth of 8 feet at low water. 11,475 cubic yards of clay and sand were removed.

DREDGING AT ST. JOHNS.

Dredge *Richelieu* worked at this place between July 1 and 22, 1905, deepening the channel between Boisvert's boat house to the St. John Yacht Club to a depth of 6 feet at low water. 970 cubic yards of hardpan were removed.

6-7 EDWARD VII., A. 1907

DREDGING AT SOREL.

The dredge *St. Louis* worked at this place between May 1 and 12, 1906. The work consisted in deepening along the government wharfs, 2,244 cubic yards of clay were removed.

The dredge *International* also worked at this place from May 25 to June 16, 1906. The work consisted in removing a sunken wharf.

DREDGING AT VILLE MARIE.

Between June 3 and 30, 1906, the close of the fiscal year, the dredge *Queen* worked at this place. The work consisted in making three cuts in front of the wharf, 180, 350 and 400 feet long, 24 feet wide and 9 feet deep at low water. One of these cuts had to be dredged over on account of having partly filled up during the spring. 6,228 cubic yards of clay were removed.

DREDGING AT YAMASKA.

Dredge *St. Louis* worked at this place from September 18 to November 16, 1905, the close of navigation. Operations consisted in deepening the channel, near Ile St. Jean to a depth of 8 feet at low water. 11,895 cubic yards of sand were removed.

This same dredge continued work at this place from May 19 to June 30, 1906, the close of the fiscal year. One cut was made in front of Ile St. Jean, 2,618 feet long, 25 feet wide and 8 feet deep at low water. 10,780 cubic yards of clay were removed.

PROVINCE OF ONTARIO.

DREDGING AT AMHERSTBURG.

Amherstburg is a town, in the county of Essex, in the township of Malden, and situated on the east bank of the Detroit river, about five miles from Lake Erie and fifteen miles south of Windsor, to which place it is connected by electric car service. The Michigan Central railway also runs into Amherstburg. Population, about 25,000. It is one of the oldest settlements in Ontario.

During the last session of parliament the sum of \$30,000 was appropriated for the dredging of a channel, 200 feet wide and 1,500 feet long, to a depth of 21 feet below low water level, to permit the entering of deep draught vessels to town docks from the main channel of the river.

On December 9, 1904, a contract covering this work was let to the Weddell Dredging Company, of Trenton, for the lump sum of \$27,000, and operations were commenced on August 7, 1905.

It being found necessary to remove the middle ground existing between work involved in the contract above referred to and the main channel of the Detroit river, an additional contract was entered into with the Weddell Dredging Company, on October 22, 1905, to perform this work, at a pro rata price of ninety-eight cents per cubic yard, place measurement, or a total amount of \$9,783.34.

This work was commenced at the beginning of November, 1905, and on June 30, 1906, the work involved in both contracts was completed, with the exception of the cleaning up of boulders of a very small portion of the area to be dredged.

In the performance of the above works 36,400 cubic yards, place measurement, of cemented gravel, clay, mud and boulders, were removed.

The total expenditure of these works from July 1, 1905, to June 30, 1906, including inspection, amounted to \$29,970.73.

SESSIONAL PAPER No. 19

DREDGING AT BOWMANVILLE.

Between August 14 and September 16, 1905, the dredge *Sir Richard* worked at this place deepening the channel from the mouth of the piers to the coal chutes to a depth of 12 feet at low water. 14,400 cubic yards of sand were removed.

DREDGING AT BELLEVILLE.

The dredge *Sir Richard* worked at this place between November 4 and 11, 1905, the close of navigation. Operations consisted of deepening along the revetment wall, at the mouth of the river Moira. 700 cubic yards of clay and boulders were removed.

Work was continued at this place by this same dredge from May 21 to June 30, 1906, the end of the fiscal year. Work consisted in making one cut, in front of Rathbun's dock, 800 feet long, 25 feet wide and 14 feet deep at low water. Two other cuts were made in front of Allen's coal dock, 750 feet long, each 25 feet wide and 14 feet deep at low water. 18,400 cubic yards of boulders and gravel were removed.

DREDGING AT HAMILTON.

From October 2 to November 30, 1905, the close of navigation, the dredge *Nipissing* worked at this place, commencing operations in front of the International Harvesting Company's dock, and making a channel 16 feet deep at low water. 22,937 cubic yards of quicksand was removed.

This same dredge continued operations at this place, in front of the International Harvesting Company's dock, between June 11 and 30, 1906, the close of the fiscal year. Three cuts were made, 85, 250 and 500 feet long, 30 feet wide and 16 feet deep at low water. 8,550 cubic yards of quicksand were taken out.

DREDGING AT INDIAN RIVER.

Indian river runs through the townships of Douro, Dummer and Otonabee, from Stoney lake to Rice lake.

At the last session of parliament, the sum of \$3,000 was appropriated for cutting a channel through the Devil's Elbow, in the Indian river, near the village of Keene, county of Peterborough, and on June 27 last authority was given to proceed with the work by day labour.

Work was commenced on July 1 and completed September 7, and consisted in the construction of a channel, 1,125 feet in length by 80 feet in width and 8 feet in depth, through the elbow, also a point was removed below the elbow 50 feet wide by 150 feet in length.

Total expenditure for fiscal year, 1905-6, \$1,724.48.

DREDGING AT KINGSVILLE.

Dredging was performed at this place by the dredge *Ontario* from July 1 to November 25, 1905, the close of navigation. The work consisted in deepening between the piers at the entrance to the harbour. A channel was made 100 feet wide, 1,075 feet long to a depth of 14 feet at low water 46,890 cubic yards of sand, quicksand and clay were removed.

From June 4 to 23, 1906, this same dredge worked at this place. One cut was made on west side of harbour, and along east side of west pier, 375 feet long, 25 feet wide and 14 feet deep at low water. One other cut was cleared out which had been made last year, but had filled up again, 305 feet long, 25 feet wide and 14 feet deep. 4,770 cubic yards of sand and quicksand was removed.

DREDGING AT KINGSTON.

Dredging was done at this place by the dredge *Nipissing* from July 1 to August 12, and between September 18 and 23, 1905. The work consisted in making several cuts

6-7 EDWARD VII., A. 1907

in front of Richardson's elevator, Davis' dry dock, Crawford & Rathbun's wharfs and the K. and P. Railway Company's docks, to an average depth of 13 feet at low water. The material removed consisted of 15,800 cubic yards of clay, stones, and quick sand.

DREDGING AT LITTLE CURRENT.

Little Current, a town of 800 inhabitants, is situated on the east shore of Manitoulin island, on the north channel of Georgian bay.

Authority was given on May 23, 1904, also on April 25, 1905, to dredge a channel 800 feet in width and 1,600 feet in length to 22 feet at low water, and an agreement was made with Mr. C. S. Boone to do the work, which was continued from July 1 till November 30, when work closed down for the season, and resumed again on April 1 last.

The dredge worked 1,080½ hours removing 40,305½ cubic yards of rocks, scow measurement.

Total expenditure for fiscal year, 1905-6, \$50,070.89.

DREDGING AT MIDLAND.

Midland, Simcoe county, is the terminus of the Midland division of the Grand Trunk Railway on Georgian Bay. Population 3,500. Large quantities of lumber are shipped to and from this harbour, and the railway company has two large grain elevators at this place. There is also a large smelting works in operation.

On June 5 last a contract was let to the Owen Sound Dredge and Construction Company for the dredging in front of the Grand Trunk Railway elevator, at Tiffin. Work was commenced on April 18 and is still in progress.

Total expenditure during fiscal year ended 1906, \$53,344.10.

DREDGING AT NEW LISKEARD.

The dredge *Queen* worked at this place from July 1 to November 11, 1905, the close of navigation. The work consisted in deepening and widening the channel leading to the wharfs at the mouth of the Wabi river. Continual dredging will be required at this place to keep the channel open owing to the large amount of material, consisting of logs, roots and sand being washed down from the Wabi river during the spring freshets. The material removed was 28,525 cubic yards of clay.

DREDGING AT NEWCASTLE.

From September 18 to October 31, 1905, the dredge *Sir Richard* worked at this place, deepening the entrance to and between the piers. 16,300 cubic yards of sand were removed.

DREDGING AT OTONABEE RIVER.

Otonabee river is an important waterway through the town of Peterborough and County of Peterborough, and empties into Rice lake. It forms part of the Trent Valley Canal system.

At the last session of parliament, the sum of \$12,000 was appropriated for dredging, and on October 30 last, authority was given to have the work performed. The dredge *Trent* belonging to the Department of Railways and Canals was used to do the work, which commenced on October 27, and continued up till June 30, and is still in progress. It consists in dredging a channel between Hunter Street bridge and the C.P.R. bridge, on the west side of the river. The channel is to be 100 feet in width by 8 feet in depth.

Total expenditure for fiscal year, 1905-6, \$11,967.02.

SESSIONAL PAPER No. 19

DREDGING IN THE OTTAWA RIVER.

The dredge *Challenge* worked in this river from July 1 to November 16, 1905, the close of navigation. Work was performed in the channel from the Ottawa river to the Hawkesbury Lumber Co.'s wharfs, deepening the channel to 10 feet at low water. This work, as far as it has progressed, has proved of much value to navigation, as lumber barges were unable to come out with more than a half load, and this work when completed will enable the heaviest draught vessels to go in and out loaded to their full capacity.

Four days' work were also performed at the entrance to the Rideau canal locks, at Ottawa, removing a saw dust shoal, which had formed there.

This same dredge was afterwards taken to Cumberland, where a cut was made in front of the wharf to a depth of 10 feet at low water. Some sunken cribs were also removed.

One cut was also made in front of the dock at Rockland, and one cut in front of Eddy's wharf at Hull, by this same dredge.

The total quantity of material removed was 30,350 cubic yards of rock, hardpan, gravel, clay, boulders and sand.

Between June 18 and 30, 1906, the end of the fiscal year, this same dredge worked in the Ottawa river at the mouth of the South Nation river, making a cut through a clay bank 226 feet long, 25 feet wide and 7 feet deep at low water. 1,700 cubic yards of clay were removed.

DREDGING AT OWEN SOUND.

Owen Sound is situated at the mouth of the Sydenham river, which flows into the head of Owen Sound, an arm of the Georgian bay, in the county of Grey.

Authority was given on October 27 last, to enter into an agreement with Bowman Bros., to do the required dredging in the C.P.R. slip, and work was commenced on November 13, and completed on December 9. The dredge worked 210 hours and removed 20,115 cubic yards.

An agreement was entered into with Bowman Bros., to do certain dredging, and work was commenced on April 2 and is still in progress. The dredge worked 637 hours, removing 85,455 cubic yards of which 50,760 was from Carney's mills, and the remaining 34,695 from the harbour.

Total expenditure for fiscal year, 1905-6, \$19,318.20.

DREDGING AT PICKERING.

The dredge *Sir Richard* worked at this place from July 1 to August 12, 1905, deepening the channel between the piers and the elevator to a depth of 12 feet at low water. The material removed was 22,800 cubic yards of sand and mud.

DREDGING AT POINT EDWARD.

Point Edward is situated at the head of and on the east side of St. Clair river, in the county of Lambton, adjoining the town of Sarnia, and is 61 miles west of London. It is a port of call for the Northern Navigation Company's steamers and for many of the large crafts plying on the upper lakes. It is the terminus of a branch of the Grand Trunk Railway, which railroad handles a very large amount of general freight, iron ore and steel rails, &c., which is either shipped out or brought into from the upper lake ports. A large quantity of grain is also handled from the Grand Trunk elevator at this place.

At the last session of parliament the sum of \$17,000 was appropriated for dredging at this point. Contract was let to the Sarnia Bay Lumber, Timber & Salt Co. of Sarnia, and, on May 8, 1905, authority was given to proceed with the work, i.e., the dredging of a channel, 150 feet wide to a depth of 22 feet below low water level, along front of docks to provide safe entrance and exit for deep draught vessels. This work

6-7 EDWARD VII., A. 1907

was in progress at the beginning of the fiscal year and continued until September 11, 1905, when work ceased, owing to appropriation being exhausted.

On September 28, authority was given to resume dredging at this point, work to be performed by the same company which did the previous dredging, and same was accordingly resumed on October 25, till the completion and the widening of said channel to a width of 200 feet, which width was found necessary to allow the largest boats to swing freely with safety in and out of channel. Dredging was continued until December 1, 1905, when work closed down for the winter. In the performance of this work 79,460 cubic yards, scow measurement, of sand were excavated.

Last spring a contract was let to the Dominion Dredging & Construction Co., of Ottawa, for continuing the dredging at this place, and on May 21, 1905, authority was received to expend the sum of \$8,000 on this work. Dredging operations were commenced on May 19, and were still in progress at the end of the fiscal year. The amount of material excavated on this contract to the latter date being 11,500 cubic yards, scow measurement, of sand.

The total amount excavated during the fiscal year being 90,960 cubic yards, scow measurement.

Total expenditure during 1905-6, \$17,928.36.

DREDGING AT PORT BURWELL.

Dredge *Ontario* started operations at this place on June 25, and was working there on the 30th of the same month, 1906, the close of the fiscal year. One cut was made 280 feet long, 25 feet wide and 18 feet deep at low water, in a bar outside of east and west piers. The material removed was 1,890 cubic yards of sand.

DREDGING AT SARNIA.

Sarnia is situated on the east bank of the St. Clair river, in the county of Lambton, about three miles from Lake Huron, and is fifty-nine miles from London by rail. There are two lines of the Grand Trunk railway and one of the Père Marquette railway entering the town; population about 8,000. It is a port of call for a number of lines of steamers, and an important shipping point.

At the last session of parliament, the sum of \$13,000 was voted for dredging. On May 8, 1905, authority was given to proceed with the work, contract for same having been let to The Sarnia Bay Lumber, Timber and Salt Co., of Sarnia.

From October 12 to 24, 1905, dredging was performed to a depth of 20 feet below low water level, along front of Imperial Oil Company's docks, and in doing this work 9,000 cubic yards, scow measurement, of sticky clay were removed.

On April 26, 1906, authority was given to expend the sum of \$4,900 on dredging the approach to the Sarnia Bay Lumber Company's dock and Point Edward docks.

Operations were commenced on May 16 and completed on June 30, 1906, during which time 29,400 cubic yards of sand were removed.

The total amount of material removed at this place, during the fiscal year 1905-6, was 38,400 cubic yards of sticky clay and sand.

Total expenditure during the fiscal year of 1905-6, \$8,396.95.

DREDGING AT STURGEON FALLS.

From August 14 to November 18, 1905, the close of navigation, the dredge *Mattawa* was working at this place, the work consisted of removing some shoals and making a channel 12 feet deep at low water. 16,200 cubic yards of sand, clay and quicksand were removed.

Operations were continued at this place, by the same dredge, from May 14 to June 30, 1906, the close of the fiscal year. Two cuts were made, 1,800 and 800 feet long, 25 feet wide and 12 feet deep at low water, near Cockburn's island. The material removed was 13,300 cubic yards of clay and sand.

SESSIONAL PAPER No. 19

DREDGING AT SYDENHAM RIVER.

The Sydenham river, in the county of Kent, empties into the Chenal Ecarte, at a point called Johnston's bend, and extends from Port Lambton to Mitchell's bay, emptying into this bay between Ste. Anne island and the mainland. The thriving town of Wallaceburg is situated about 3½ miles from the mouth of the Sydenham river, and the Chenal Ecarte route is largely used for navigation to and from this point.

At the last session of parliament, the sum of \$4,000 was appropriated for dredging on the Chenal Ecarte route, and, on September 14, 1905, a contract was let to the Sarnia Bay Lumber, Timber and Salt Co., of Sarnia, for the performance of dredging required at Johnston's bend and at the mouth of the Chenal Ecarte.

The above dredging was commenced on September 16, and completed on October 4, 1905, and consisted in the dredging of 6,200 cubic yards of mud and sand off a point at Johnston's Bend, giving a depth of 15 feet below low water level, thus rendering feasible the turning of this acute bend of the river, without any danger to the large sized boats plying between the river St. Clair and Wallaceburg; also the widening and lengthening of the channel at the entrance to the Chenal Ecarte, from Mitchell's bay, giving a depth of 9 feet below low water level, and a width of 50 feet.

The widening and deepening of this latter channel was necessary to enable the farmers to take their produce, by scows, to Wallaceburg, and to which point, large quantities of sugar beets are shipped to the sugar refinery.

Total expenditure during fiscal year, \$3,728.

DREDGING AT WIARTON.

Warton is a prosperous town in the county of Bruce, at the head of Colpoy's bay, about thirty-two miles northwest of Owen Sound. It is the terminus of the Georgian bay and Lake Erie branch of the Grand Trunk railway.

On August 23, authority was given to expend the sum of \$18,000 for dredging of harbour to a depth of 16 feet below low water level. Contract was entered into with Mr. A. F. Bowman, of Southampton, for the performance of the work, which commenced on June 30 and continued until September 11, 1905, when the appropriation being expended, work closed down.

The whole of the area which it was intended to dredge was not quite covered, but only a small portion of the least important part remained.

In the performance of this work 8,213 cubic yards of sand, 70,466 cubic yards of clay, 2,800 cubic yards of clay and boulders and 12,600 cubic yards of clay and sand were excavated.

The total expenditure during 1905-6 was, \$17,999.33.

DREDGING AT WOLFE ISLAND.

The dredge *Nipissing* worked at this place from August 14 to September 16, 1905. The work consisted in completing the dredging previously done in front of the ferry wharf, making a channel 12 feet deep at low water. The material taken out consisted of 13,725 cubic yards of clay, boulders and hardpan.

6-7 EDWARD VII., A. 1907

STATEMENT of Expenditure and quantities of material removed by the different Departmental Dredges at different localities in Ontario and Quebec, during the fiscal year ending June 30, 1906.

Dredges. D.P.W.	Location.	Yards removed.	Character of soil.	Expendi- ture.	Cost per yard.
				\$ cts.	\$ cts.
Challenge D.P.W.	Ottawa River.....	32,050	Rock, gravel, boulders and clay.	5,258 88	0 16½
Nipissing. D.P.W.	Kingston..... Wolfe Island..... Hamilton.....	15,800 13,725 31,487	Clay, sand, mud, boulders, hardpan and quicksand....	7,213 24	0 11½
Ontario..... D.P.W.	Kingsville..... Port Burwell.....	51,660 1,890	Sand, clay and quicksand....	7,650 41	0 14½
Queen D.P.W.	New Liskeard..... Ville Marie.....	28,525 6,228	Clay.....	8,507 56	0 24½
Mattawa.....	Sturgeon Falls.....	29,500	Quicksand, clay and sand.....	10,123 42	0 34½
Sir Richard. D.P.W.	Pickering..... Bowmanville..... Newcastle..... Belleville.....	22,300 14,400 16,300 19,100	Sand and mud..... Sand..... Clay, boulders and gravel..	6,984 64	0 09½
Richelieu. D.P.W.	St. Johns..... St. Blaise..... Isle aux Noix..... Chambly.....	970 11,475 17,710 7,500	Hardpan..... Clay and sand..... "..... Clay, boulders, sand & hardpan	6,724 25	0 17½
St. Louis.	Notre Dame de Pierre- ville..... Yamaska..... Sorel.....	13,086 22,175 2,244	Sand..... Sand and clay..... Clay.....	3,588 47	0 09½
Nithsdale..... D.P.W.	Berthier..... Montmagny..... Les Eboulements..... Rimouski.....	2,100 360 3,050 12,740	Clay and stones..... Sand..... Clay, sand, stone..... Sand and stone.....	13,778 40	0 75½
International.. D.P.W.	Chicoutimi.. .. Quebec.....	62,500 2,000	Hardpan, clay and boulders.. Sand, boulders and hardpan..	17,696 41	0 27½
St. Maurice.. D.P.W.	Isle aux Morsions..... Mekinac..... Point à Doré.....	1,939 3,478 3,353	Sand..... Sand and boulders.....	9,308 63	1 06
Progress.....	Quebec..... St. Jean Isle Orleans..... River Ouelle.....	62,080 300 400	Sand and boulders..... Hardpan..... Sand and clay.....	15,517 92	0 24½
No. 6.....	Levis..... Berthier en bas.....	6,240 1,160	Silt..... Clay and silt.....	4,117 61	0 53½

NOTE—The high price per cubic yard as shown against the Dredge 'St. Maurice' was owing to the expense attached to the sinking and raising of the vessel during the months of August and September last.

SESSIONAL PAPER No. 19

CLASSIFICATION AND DISBURSEMENTS OF THE DREDGES DURING THE YEAR ENDED JUNE 30, 1906,
DREDGE 'CHALLENGE.'

ITEMS.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	586 00	541 93	477 53	490 85	350 66	.....	.....	.....	.....	.....	.....	212 50	2 659 47
Coal.....	184 00	170 20	179 40	15 75	.....	.....	.....	.....	.....	.....	.....	37 40	586 75
Provisions.....	138 20	200 90	135 00	144 00	128 31	.....	.....	.....	.....	.....	.....	39 79	836 20
Stores.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2 25	1 24	38 83	102 32
Equipment.....	7 98	.....	.....	10 00	.....	.....	.....	.....	.....	.....	.....	54 64	72 62
Repairs.....	.....	.....	.....	.....	.....	79 59	340 51	.....	.....	53 74	.....	433 97	907 81
Forage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22 75	22 75
Contingencies.....	.....	21 10	.....	18 81	13 85	17 20	.....	.....	.....	.....	.....	.....	70 96
Totals.....	916 18	934 13	791 93	679 41	492 82	96 79	340 51	.....	.....	55 99	1 24	949 88	5,258 88
Working expenses.....	916 18	934 13	791 93	679 41	492 82	17 20	.....	.....	.....	2 25	1 24	515 91	4,351 07
Repairs, ordinary.....	.....	.....	.....	.....	.....	79 59	340 51	.....	.....	53 74	.....	433 97	907 81
Totals.....	916 18	934 13	791 93	679 41	492 82	96 79	340 51	.....	.....	55 99	1 24	949 88	5,258 88

6-7 EDWARD VII., A. 1907

CLASSIFICATION OF DISBURSEMENTS OF the Dredges during the Year ended 30th June, 1906.
DREDGE 'NIPissing.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	405 00	415 68	425 42	392 90	398 33	80 00	233 50	181 25	173 75	216 41	373 00	3,235 24	
Coal.....	254 90	231 90	358 00	161 50	99 00	.....	.....	.....	437 50	437 50	.....	1,542 80
Provisions.....	123 00	121 08	130 45	120 69	119 80	.....	.....	.....	.....	31 61	102 20	748 83
Stores.....	2 95	10 53	.....	.....	8 85	.....	184 75	98 23	.....	15 43	17 00	332 74
Equipment.....	.....	.....	10 75	.....	41 04	.....	521 66	37 25	28 57	16 50	.....	655 77
Repairs.....	.....	60 74	79 76	.....	.....	.....	.....	287 45	181 11	12 70	13 30	585 06
Contingencies.....	.....	.....	.....	.....	26 05	8 50	.....	.....	7 01	11 24	.....	52 85
Totals.....	785 85	839 93	1,004 38	675 09	693 07	88 50	939 91	599 18	340 44	741 39	505 50	7,213 24
Working expenses.....	785 85	779 19	924 62	675 09	693 07	88 50	939 91	311 73	209 33	728 69	492 20	6,628 18
Repairs, ordinary.....	60 74	79 76	287 45	131 11	12 70	13 30	585 06
Totals.....	785 85	839 93	1,004 38	675 09	693 07	88 50	939 91	599 18	340 44	741 39	505 50	7,213 24

DREDGE 'ONTARIO.'

Wages.....	440 10	444 19	470 00	443 50	467 11	...	...	170 40	447 23	461 02	475 00	3,818 55
Coal.....	235 62	182 34	221 55	...	101 90	...	...	...	289 70	133 98	47 08	1,058 09
Provisions.....	128 79	139 61	139 00	128 00	137 70	...	...	102 40	...	6 10	135 00	1,044 48
Stores.....	11 43	...	23 10	...	...	...	...	74 00	161 97	...	...	276 60
Equipment.....	...	40 49	42 00	252 13	8 98	...	...	7 20	204 35	61 31	...	244 84
Repairs.....	6 55	8 05	83 08	...	42 70	40 88	...	6 81	571 57	...	9 82	957 79
Contingencies.....	...	...	...	823 63	758 29	40 88	...	...	66 77	...	...	250 06
Totals.....	822 49	814 68	978 73	823 63	758 29	40 88	...	360 81	1,721 59	662 41	665 90	7,650 41
Working expenses.....	815 94	806 63	936 73	571 50	749 31	40 88	...	363 61	1,150 02	601 10	666 90	6,692 62
Repairs, ordinary.....	6 55	8 05	42 00	252 13	8 98	...	...	7 20	571 57	61 31	...	957 79
Totals.....	822 49	814 68	978 73	823 63	758 29	40 88	...	360 81	1,721 59	662 41	666 90	7,650 41

SESSIONAL PAPER No. 19

DREDGE 'QUEEN.'

Wages.....	445 00	445 00	444 96	445 00	666 06	108 76	.....	118 76	768 06	476 33	437 58	445 00	4,280 50
Coal.....	43 75	135 00	18 50	225 75	203 56	.....	250 00	.....	54 20	191 00	.....	460 00	1,392 86
Provisions.....	67 78	133 00	138 00	135 00	189 21	.....	.....	.....	74 00	131 80	129 98	135 00	1,180 19
Stores.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	84 98	.....	148 80	375 56
Equipment.....	154 05	106 87	64 27	52 23	25 00	39 68	190 93	76 60	66 81	.....	87 58	49 48	49 48
Repairs.....	.....	.....	.....	.....	.....	41 96	9 71	36 99	.....	53 25	.....	148 80	1,013 07
Towage.....	.....	.....	.....	9 00	.....	.....	.....	.....	.....	.....	.....	53 25	53 25
Contingencies.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	55 00	152 65
Totals.....	845 58	683 87	665 72	866 98	1,074 15	190 38	450 64	232 34	463 07	937 36	655 39	1,442 08	8,507 56
Working expenses.....	691 53	577 00	601 45	814 75	1,049 15	150 70	250 71	155 74	396 26	937 36	567 56	1,293 28	7,494 49
Repairs, ordinary.....	154 05	106 87	64 27	52 23	25 00	39 68	190 93	76 60	66 81	.....	87 53	148 80	1,013 07
Totals.....	845 58	683 87	665 72	866 98	1,074 15	190 38	450 64	232 34	463 07	937 36	655 39	1,442 08	8,507 56

DREDGE 'MATTAWA.'

Wages.....	.....	1,545 06	857 98	536 51	293 37	70 00	40 97	20 00	130 16	245 79	454 12	456 50	4,650 43
Coal.....	.....	138 00	117 00	223 80	117 00	25 00	.....	40 00	34 48	.....	510 31	135 00	1,106 11
Provisions.....	.....	266 32	196 68	106 57	73 80	.....	.....	.....	74 00	20 00	96 98	.....	993 83
Stores.....	.....	182 13	4 35	.....	22 00	.....	.....	.....	.....	32 43	55 23	.....	370 14
Equipment.....	.....	78 03	.....	.....	.....	.....	.....	.....	.....	11 25	11 65	.....	100 93
Repairs.....	.....	71 82	235 92	17 90	24 88	.....	.....	.....	.....	409 70	373 18	508 60	1,641 00
Towage.....	.....	.....	360 00	.....	.....	.....	.....	.....	22 00	9 15	.....	88 21	360 00
Contingencies.....	.....	.....	76 90	375 75	233 79	.....	12 70	13 69	.....	.....	18 79	.....	900 98
Totals.....	.....	2,281 36	1,848 83	1,260 53	813 84	95 00	53 67	73 69	269 64	728 29	1,519 26	1,188 31	10,123 42
Working expenses.....	.....	2,209 54	1,612 91	1,242 63	789 96	95 00	53 67	73 69	260 64	318 59	1,146 08	679 71	8,492 42
Repairs, ordinary.....	.....	71 82	235 92	17 90	23 88	.....	.....	.....	.....	409 70	373 18	508 60	1,641 00
Totals.....	.....	2,281 36	1,848 83	1,260 53	813 84	95 00	53 67	73 69	260 64	728 29	1,519 26	1,188 31	10,123 42

CLASSIFICATION OF DISBURSEMENTS of the Dredges during the Year ended 30th June, 1906—*Continued.*
DREDGE 'SIR RICHARD.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	400 00	400 00	400 00	400 00	144 67	.....	75 00	257 25	10 00	204 50	284 44	435 49	3,011 35
Coal.....	257 50	233 75	226 31	194 75	20 78	.....	.....	.....	.....	.....	166 92	200 75	1,300 76
Provisions.....	123 00	123 00	123 00	123 00	45 50	.....	.....	.....	.....	.....	68 44	143 97	749 91
Stores.....	.....	17 28	.....	28 47	.....	.....	.....	5 48	85 50	17 20	41 83	.....	195 76
Equipment.....	.....	.....	.....	.....	.....	.....	.....	.....	4 50	.....	.....	.....	4 50
Repairs.....	.....	33 20	.....	42 02	.....	681 26	30 66	88 40	5 65	716 45	26 18	.....	1,556 31
Contingencies.....	.....	.....	4 10	.....	35 60	.....	.....	.....	.....	15 10	11 45	5 75	1,166 05
Totals.....	780 50	807 23	753 41	788 24	246 55	681 26	105 66	351 13	132 19	963 25	599 26	785 96	6,984 64
Working expenses.....	780 50	774 03	753 41	746 22	246 55	.....	75 00	351 13	105 65	236 80	673 08	785 96	5,428 33
Repairs, ordinary.....	.....	33 20	.....	42 02	.....	681 26	30 66	.....	26 54	716 45	26 18	.....	1,556 31
Totals.....	780 50	807 23	753 41	788 24	246 55	681 26	105 66	351 13	132 19	963 25	599 26	785 96	6,984 64

DREDGE 'RICHELIEU.'

	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	401 75	385 00	395 00	395 00	416 17	.....	170 78	213 25	417 50	279 70	298 17	410 00	3,792 32
Coal.....	77 45	119 22	126 00	130 52	74 54	.....	.....	.....	13 50	.....	90 75	279 99	911 97
Provisions.....	123 00	123 00	127 40	123 00	113 00	.....	.....	4 00	33 60	12 00	72 25	123 00	854 26
Stores.....	6 95	15 50	.....	4 68	70	.....	.....	100 09	101 25	1 20	27 54	.....	257 91
Equipment.....	.....	1 50	.....	3 48	.....	.....	.....	.....	.....	.....	.....	2 30	7 28
Repairs.....	158 77	38 31	.....	.....	20 25	.....	.....	37 51	154 63	296 98	140 54	.....	816 74
Towage.....	.....	.....	.....	.....	14 88	.....	10 78	6 79	.....	.....	.....	.....	20 25
Contingencies.....	2 82	13 35	.....	.....	.....	.....	.....	.....	.....	2 40	9 92	2 58	63 52
Totals.....	770 74	666 07	688 21	656 68	639 54	.....	181 56	361 64	720 49	582 28	639 17	817 87	6,794 25
Working expenses.....	611 97	666 07	649 90	656 68	639 54	.....	181 56	324 13	665 86	296 30	498 63	817 87	5,907 51
Repairs, ordinary.....	158 77	38 31	.....	.....	.....	.....	.....	37 51	154 63	296 98	140 54	.....	816 74
Totals.....	770 74	666 07	688 21	656 68	639 54	.....	181 56	361 64	720 49	582 28	639 17	817 87	6,794 25

6-7 EDWARD VII., A. 1907

SESSIONAL PAPER No. 19

DREDGE 'ST. LOUIS.'

13 Wages.....	493 00	370 50	360 00	370 00	336 66	.....	.....	149 42	370 00	395 00	2,843 08
14 Provisions.....	.....	123 00	122 60	123 90	103 00	.....	.....	.....	123 00	123 00	718 20
15 Repairs.....	4 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	4 00
16 Towage.....	.....	1 50	16 00	.....	.....	.....	.....	.....	.....	.....	16 00
Contingencies.....	.....	2 44	2 44	.....	.....	3 75	.....	.....	50	.....	8 19
Totals.....	497 00	494 50	509 04	493 90	439 66	3 75	.....	149 42	493 50	508 00	3,588 47
Working expenses.....	493 00	494 50	509 04	493 90	439 66	3 75	.....	149 42	493 50	508 00	3,584 47
Repairs, ordinary.....	4 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	4 00
Totals.....	497 00	494 50	509 04	493 90	439 66	3 75	.....	149 42	493 50	508 00	3,588 47

DREDGE 'NITHSDALE', J. D. CAMERON.

Wages.....	387 75	275 00	267 50	285 00	126 47	40 00	.....	84 61	319 77	440 00	2,626 40
Coal.....	22 50	84 00	.....	.....	.....	.....	.....	.....	.....	.....	280 86
Provisions.....	106 45	167 09	126 00	232 00	67 80	.....	.....	.....	.....	140 70	830 04
Stores.....	46 09	.....	.....	.....	41 96	.....	104 00	.....	.....	96 00	290 04
Repairs.....	69 68	4 79	.....	.....	.....	.....	.....	.....	.....	.....	74 47
Towage.....	.....	600 00	.....	.....	.....	.....	.....	950 00	.....	.....	1,560 00
Contingencies.....	1,240 00	1,240 00	1,313 00	1,240 00	600 00	.....	.....	2,475 00	41 00	7 50	8,156 50
Totals.....	1,872 47	2,360 88	1,706 50	1,757 00	839 22	40 00	.....	3,509 61	360 77	683 20	13,778 40
Working expenses.....	1,802 79	2,356 09	1,706 50	1,757 00	839 22	40 00	.....	3,509 61	360 77	683 20	13,703 93
Repairs, ordinary.....	69 68	4 79	.....	.....	.....	.....	.....	.....	.....	.....	74 47
Totals.....	1,872 47	2,360 88	1,706 50	1,757 00	839 22	40 00	.....	3,509 61	360 77	683 20	13,778 40

CLASSIFICATION AND QUANTITIES OF Material removed by dredges during the Year ended June 30, 1906—Continued.

DREDGE 'INTERNATIONAL.

Description of Material dredged.	July.		August.		September.		October.		November.		December.		January.		February.		March.		April.		May.		June.		Grand Totals.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.		
Wages.....	1,028 38	1,117 80	1,099 35	1,188 30	1,184 00	871 75	46 00	35 73	23 04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7 20	317 55	6,419 10
Coal.....	1,148 00	.....	1,447 07	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,456 40	.....	5,061 47
Provisions.....	384 28	389 41	221 86	247 68	408 54	36 89	.....	.....	13 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	88 00	1,739 16
Stores.....	.....	11 25	55 55	.....	6 56	18 25	45 85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7 90	145 36
Equipment.....	47 35	.....	185 84	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	283 19
Repairs.....	58 88	456 07	113 81	.....	487 83	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,928 00	3,044 69
Towage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	571 80
Contingencies.....	9 54	.....	18 68	.....	5 15	2 76	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	406 81	441 94
Totals.....	2,626 43	1,974 53	3,142 16	1,435 98	2,092 18	427 65	141 85	103 73	36 54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,912 10	2,747 26	17,886 41
Working expenses.....	2,567 55	1,518 46	3,128 35	1,435 98	1,614 25	428 65	141 85	103 73	36 54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,912 10	819 26	17,651 72
Repairs, ordinary.....	58 88	456 07	113 81	.....	487 83	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,928 00	3,044 69
Totals.....	2,626 43	1,974 53	3,142 16	1,435 98	2,092 18	428 65	141 85	103 73	36 54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,912 10	2,747 26	17,886 41

DREDGE 'PROGRESS,' D. P. W.

Wages.....	715 43	685 00	685 00	610 00	581 49	153 54	
------------	--------	--------	--------	--------	--------	--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--

SESSIONAL PAPER No. 19

DREDGE NO. 6, 'D. F. W.'

Wages.....	393 71	446 94	437 50	926 70	146 01	9 91	.....	.....	.....	2,360 77
Coal.....	9 26	184 34	20 63	30 66	8 90	.....	.....	.....	.....	262 81
Provisions.....	180 10	190 86	182 14	157 16	76 78	.....	.....	.....	.....	796 16
Stores.....	72 52	45 95	.....	18 50	3 60	.....	.....	.....	.....	140 57
Repairs.....	232 75	226 20	2 37	31 99	29 90	.....	.....	.....	.....	513 21
Towage.....	.....	20 00	.....	.....	.....	.....	.....	.....	.....	20 00
Contingencies.....	.....	.....	.....	3 50	20 69	.....	.....	.....	.....	24 09
Totals.....	897 36	1,114 41	651 64	1,158 51	235 78	9 91	.....	.....	.....	4,117 61
Working expenses.....	664 61	838 21	649 27	1,136 53	265 98	9 91	.....	.....	.....	3,604 40
Repairs, ordinary.....	232 75	226 20	2 37	21 99	29 90	.....	.....	.....	.....	513 21
Totals.....	897 36	1,114 41	651 64	1,158 51	285 78	9 91	.....	.....	.....	4,117 61

DREDGE 'CHALLENGE' D.P.W.

Hardpan.....	2,400	6,200	900	.....	.....	.....	.....	.....	.....	9,500
Boulders and Gravel.....	1,900	400	.....	.....	.....	.....	.....	.....	.....	2,300
Rock.....	300	.....	.....	.....	.....	.....	.....	.....	.....	800
Clay.....	.....	.....	5,500	.....	.....	.....	.....	.....	.....	7,200
Clay and stone.....	.....	1,200	.....	6,800	.....	.....	.....	.....	.....	8,000
Sand—ordinary.....	.....	2,600	.....	400	1,550	.....	.....	.....	.....	4,550
Sawdust.....	.....	.....	.....	.....	200	.....	.....	.....	.....	200
Totals.....	4,600	9,200	7,600	7,200	1,750	.....	.....	.....	.....	32,050

DREDGE 'NIPISSING', D.P.W.

Clay.....	9,900	8,175	.....	.....	.....	.....	.....	.....	.....	18,075
Clay and stone.....	.....	.....	5,700	.....	.....	.....	.....	.....	.....	5,700
Sand—very fine.....	.....	.....	.....	14,061	8,875	.....	.....	.....	.....	31,496
Mud.....	825	4,925	.....	.....	.....	.....	.....	.....	.....	5,750
Totals.....	10,725	13,100	5,700	14,061	8,875	.....	.....	.....	.....	61,011

DREDGE 'ONTARIO', D.P.W.

Clay.....	.....	1,280	3,780	1,980	.....	.....	.....	.....	.....	7,020
Sand—ordinary.....	1,620	980	.....	4,590	4,680	.....	.....	.....	.....	11,880
Sand—very fine.....	9,080	9,720	4,085	4,005	1,080	.....	.....	.....	.....	34,650
Totals.....	10,710	11,970	7,875	10,575	5,760	.....	.....	.....	.....	53,550

6-7 EDWARD VII., A. 1907

CLASSIFICATION A D QUANTITIES OF Material removed by Dredges during the Year ended June 30, 1906—Continued.
DREDGE 'QUEEN', D.P.W.

Description of Material dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Clay	7,105	6,160	6,860	7,770	630	.....	.....	.....	.....	.....	.....	6,228	34,753
Totals	7,105	6,160	6,860	7,770	630	.....	.....	.....	.....	.....	.....	6,228	34,753
DREDGE 'MATTAWA.'													
Clay and sand .....	.....	2,150	6,000	4,600	2,900	.....	.....	.....	.....	.....	5,600	7,700	28,850
Sand—very fine .....	.....	550	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	550
Totals .....	.....	2,700	6,000	4,600	2,900	.....	.....	.....	.....	.....	5,600	7,700	29,500
DREDGE 'SIR RICHARD.'													
Boulders and gravel .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,300	15,100	18,400
Clay and stone .....	.....	.....	.....	.....	700	.....	.....	.....	.....	.....	.....	.....	700
Sand—ordinary	11,500	13,250	13,750	9,000	.....	.....	.....	.....	.....	.....	.....	.....	47,500
Mud	5,500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,500
Totals	17,000	13,250	13,750	9,000	700	.....	.....	.....	.....	.....	3,300	15,100	73,100
DREDGE 'RICHELIEU.'													
Hard-pan	500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500
Clay	200	5,650	2,450	2,150	.....	.....	.....	.....	.....	.....	.....	.....	10,450
Clay, stone boulders, &c .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,500	7,500
Sand—ordinary	2,385	3,250	5,150	5,100	3,300	.....	.....	.....	.....	.....	.....	.....	19,195
Totals	3,085	8,900	7,600	7,250	3,300	.....	.....	.....	.....	.....	.....	7,500	37,045

SESSIONAL PAPER No. 19

DREDGE 'ST. LOUIS.'

Clay.....	5,520	4,830	5,602	5,847	2,682	.....	.....	.....	6,395	6,629	13,024
Sand—ordinary.....	5,520	4,830	5,602	5,847	2,682	.....	.....	.....	6,395	6,629	24,431
Totals.....	5,520	4,830	5,602	5,847	2,682	.....	.....	.....	6,395	6,629	37,505

DREDGE 'NITHSDALE.'

Boulders.....	3,240	3,640	3,990	3,710	630	.....	.....	.....	.....	.....	11,970
Clay and stone.....	770	810	.....	.....	.....	.....	.....	.....	.....	.....	4,100
Sand, ordinary.....	350	280	.....	.....	.....	.....	.....	.....	.....	770	1,820
Mud.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	350
Totals.....	4,410	4,730	3,990	3,710	630	.....	.....	.....	.....	770	18,240

DREDGE 'INTERNATIONAL' D.P.W.

Hard pan.....	17,750	4,000	.....	.....	.....	.....	.....	.....	.....	.....	21,750
Clay and boulders.....	.....	17,500	14,000	9,250	.....	.....	.....	.....	.....	.....	40,750
Sand, ordinary and boulders.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,000	2,000
Totals.....	17,750	21,500	14,000	9,250	.....	.....	.....	.....	.....	2,000	64,500

DREDGE 'PROGRESS' D.P.W.

Hard pan, clay and sand.....	14,000	14,240	13,600	14,560	5,680	.....	.....	.....	.....	700	700
Boulders and sand.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	62,080
Totals.....	14,000	14,240	13,600	14,560	5,680	.....	.....	.....	.....	700	62,780

DREDGE 'NO. 6' D.P.W.

Gravel, silt.....	3,760	2,480	520	640	.....	.....	.....	.....	.....	.....	6,240
Clay.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,160
Totals.....	3,760	2,480	520	640	.....	.....	.....	.....	.....	.....	7,400

6-7 EDWARD VII., A. 1907

CLASSIFICATION AND QUANTITIES OF MATERIAL REMOVED BY DREDGES IN THE MARITIME PROVINCES DURING THE YEAR ENDING JUNE 30,
1906—Continued.

DREDGE 'ST. MAURICE,' D.P.W.

Description of Material Dredged.	July.		August.		September.		October.		November.		December.		January.		February.		March.		April.		May.		June.		Grand Totals.	
	Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.	
Boulders.....			2,614				801																		3,415	
Sand, ordinary.	1,939		2,614				802																		5,355	
Totals.....	1,939		5,228				1,603																		8,770	

SESSIONAL PAPER No. 19

STATEMENT of Expenditure and quantities of material removed by the different Contractor's Dredges at different localities in Ontario and Quebec during the fiscal year ending June 30, 1906.

Contractor's Dredges.	Location.	Yards removed.	Character of soil.	Expenditure.		Average cost per yard per contract prices.	
				\$	cts.	\$	cts.
No. 2 Dom. Dg. & Con. Co.	Port Burwell.	100,569	Clay, sand and quicksand....	29,347	89	29 ⁸ / ₁₀₀	
No. 5 McDonald..	Doucet's Landing. . .	118,765	Clay, sand, gravel, boulders and hardpan.....	16,816	60	14 ⁴ / ₁₅	
No. 6 McDonald..	River du Loup en haut	89,380	Clay and sand.....	11,487	84	12 ¹ / ₁₀	
Little Giant	Hawkesbury.....	27,514	Hardpan, clay and sand ...	31,872	05	44 ³ / ₁₀	
	St. Placide.	20,650	Clay and boulders.....				
	Oka.....	24,010	Gravel and clay.....				
No. 4 Penetang Dg. Co	Matchedash Bay.	67,046	Clay, gravel and boulders....	9,759	89	14 ¹ / ₁₀	
Ottawa Manley Co	Rondeau.....	114,000	Clay, sand.....	24,529	37	16 ¹ / ₁₀	
	Port Stanley.....	35,433	Gumbo and sand.....				
Quebec.	L'Assomption.....	54,540	Clay and gumbo.....	16,519	17	19 ¹ / ₁₀	
	Hudson	29,160	Clay, sand, gravel and blds. }				
	Beauharnois.....	2,000	Clay.....				
No. 15 Bowman ...	Saugeen River.....	14,554	Hardpan, clay and boulders..	8,227	75	56 ⁸ / ₁₅	
No. 7 Prendergast.	Matchedash Bay.....	49,350	Clay, sand and gravel.	8,083	24	16 ¹ / ₁₀	
No. 1 T. F. Moore.	Blanche Shoals.	75,525	Sand and clay	15,761	25	20 ¹ / ₁₀	
No. 4 Genl. Con. Co	Graham.....	32,190	Clay and hardpan.....	18,073	63	21 ¹ / ₁₀	
	St. Francis.....	49,500	Quicksand and clay.....				
	St. Andrews.....	3,110	Sand and boulders.....				
Made..	Port Stanley.....	87,802	Clay, sand, gravel.....	23,836	90	19	
	Port Dover.....	9,956	Clay, sand.....				
	" casting over Rondeau.....	27,702	Clay and sand.....				
Chateaugay.....	Rigaud.....	52,920	Clay, sand, quicksand, gravel and boulders.....	34,103	75	42 ⁷ / ₁₀	
	Como	27,370	Hardpan, gravel, boulders. }				

6-7 EDWARD VII., A. 1907

STATEMENT of Expenditure and quantities of material, &c.—*Continued.*

Contractor's Dredges.	Location.	Yards removed.	Character of soil.	Expenditure.	Average cost per yard per contract prices.
				\$ cts.	\$ cts.
St. Lawrence, Davis & Sons.....	Yamaska	88,800	Fine sand	18,073 75	20 $\frac{7}{8}$
E. Hall No. 1.....	Pt. Edward.....	79,460	Sand.....	23,049 26	21 $\frac{1}{2}$
Sarnia Bay Lum-ber, Timber & Salt Co.....	Sydenham River	6,210	Mud and sand.....		
	Ch.: Ecarte.....	5,300	Mud and clay.....		
	Sarnia	38,400	Gumbo, sand.....		
Trenton	Trenton Cut.....	32,395	Clay, sand and gravel.....	36,812 48	27 $\frac{3}{8}$
R. Weddell.....	" Harbour.....	15,390	" "		
	" River.....	19,000	Rock, boulders and hardpan		
	Northport.....	23,880	Hardpan, clay, gravel & blds.		
	Nigger Island.....	36,810	Clay, sand, gravel, boulders, slabs and logs.....		
Duke of York.....	St. Maurice.....	200,931	Clay, sand and gravel, blds. } Slabs and logs.....	27,875 44	13 $\frac{1}{2}$
Arnoldi, Marlton Dredging Co.....	Kincardine.....	15,960	Sand and mud	15,256 30	31 $\frac{1}{2}$
	Bayfield	5,990	Clay, sand, gravel, hardpan, boulders rock		
	Goderich.....	25,560	Clay, sand, gravel and blds.		
	Port Elgin	570	Sand		
Central City.....	St. Andrews.....	10,400	Hardpan, boulders and sand } Clay and sand.....	28,756 00	42 $\frac{1}{2}$
Cohen & Son.....	Rigaud.....	16,685	Hardpan		
	Oka.....	10,080	Clay and boulders.....		
	St. Placide	30,100			
No. 4 Canada.....	Chateaugay Basin.....	12,850	Harpan, clay and sand.	24,779 87	40
	Berthierville.....	33,380	Clay, sand and quicksand.....		
Cohen & Son.....	Como.....	15,670	Hardpan and stone.....		
No. 1 Boone	Collingwood.....	52,426	Boulders, hardpan and rock } Rock	86,894 26	1 21 $\frac{1}{2}$
	Little Current.....	18,936			
No. 14 D. McCarthy, Boone.....	Collingwood.....	24,227	Rock and mud.....	94,843 23	1 12 $\frac{1}{4}$
	Little Current.....	14,222	Rock		
	Midland.....	46,018	Clay, sand, gravel and blds.		
Frank	Warton	94,079	Clay, sand, gravel and blds. } Clay, gravel and sand	38,985 31	15 $\frac{1}{2}$
Bowman.....	Owen Sound.....	154,575			
Kingsford	Port Arthur.....	93,666	Quicksand and clay.....	23,073 81	23 $\frac{1}{2}$
Bowman.....	Collingwood.....	3,382	Clay and rock.....		

SESSIONAL PAPER No. 19

STATEMENT of Expenditure and quantities of material, &c.—Continued.

Contractor's Dredges.	Location.	Yards removed.	Character of soil.	Expenditure.	Average cost per yard per contract prices.
				\$ cts.	\$ cts.
No. 1 Great Lake Dg. Co.	Port Arthur..... Kaministiquia.....	115,955 13,225	} Quicksand, clay and blds.	21,711 64	16½
No. 6 Bowman	Port Arthur and Fort William..... Port Arthur..... Kaministiquia.....	304,201 52,840 52,184	} Quicksand and clay..... Quicksand..... Clay.....	53,701 45	13½
No. 5 Great Lakes Dg. Co.	Port Arthur and Fort William..... Port Arthur..... Fort William.....	301,193 12,893 23,088	} Clay, quicksand, hardpan and boulders..... Clay..... Clay, gravel and boulders..	54,457 43	16½
Pontiac.....	Batiscan.....	66,880	} Clay.....	23,743 95	14½
W. J. Poupore ..	River St. Maurice.....	50,079			
	River du Loup en haut.	50,925			
No. 9, Owen Sound Dg. Co.	Midland.....	75,400	Clay, sand, gravel, rock & blds.	51,064 09	67½
St. Pierre.....	Godefroi River.....	59,345	} Sand and clay.....	14,416 12	13½
	St. Francis.....	2 160			
	Nicolet.....	10,890			
	St. Maurice.....	36,420			
Otto, Can. Improvement Co.	River Jesus.....	29,465	Clay, sand, gravel and blds..	9,813 79	33½
No. 2 T. F. Moore	Blanche Shoals.....	57,316	Sand.....	11,799 25	20½
No. 6 Prendergast.	Batiscan.....	4,300	Sand.....	588 40	13½
No. 4, Owen Sound Dg. & Const. Co.	Midland..... Matchedash.....	1,380 1,950	} Clay, sand, gravel and blds. Clay.....	1,473 32	44½
Dominion.....	Fort William.....	267,494	} Clay, sand and quicksand..	44,918 16	13½
Bowman.....	Port Arthur.....	62,888			
Wilcox.....	Belle River.....	16,400	} Sand and clay.....	4,427 25	26½
Chatham Dg. Co.	Perce River.....	385			
No. 3, Dom. Dg. Co.	Pt. Edward.....	11,500	Gravel.....	2,148 00	18½

6-7 EDWARD VII., A. 1907

STATEMENT of Expenditure and quantities of material, &c.—*Continued.*

Contractor's Dredges.	Location.	Yards removed.	Character of soil.	Expenditure.	Average cost per yard per contract prices.
				\$ cts.	\$ cts.
Simcoe, Brown & Aylmer.....	Beaverton.....	11,726	Sand, clay and gravel.....	3,870 50	33
Prince Louis, W.J. Poupore.....	Maskinonge	36,019	Clay and sand.....	3,382 73	09½
No.3, Edward Bros	Blind River.....	5,120	Sand, clay and sawdust....	1,010 20	19½
I.X.L., Weddell..	Port Arthur.....	39,132	Clay.....	3,821 54	09½
St. Lawrence Manley Co.....	Port Burwell.	6,527 45,033	Sand and gravel..... } Pulling piles..... }	7,658 94	14½
Weddell Dg. Co...	Amherstburg.....	37,584	Rock.....	37,509 34	99½

SESSIONAL PAPER No. 19

CLASSIFICATION AND QUANTITIES OF MATERIAL REMOVED BY DREDGES DURING THE YEAR ENDED JUNE 30, 1906.

DREDGE NO. 2 DOM. DG. C.—PORT BURWELL.

Description of Material Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Clay.....	780	2,828	5,116	3,201	1,442	.....	.....	.....	.....	.....	.....	10,860	23,715
Sand—ordinary.....	600	619	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,219
Sand—very fine.....	19,320	14,736	4,982	5,217	6,418	.....	.....	.....	.....	9,771	15,281	.....	75,635
Totals.....	20,700	18,181	10,008	8,418	7,860	.....	.....	.....	.....	9,771	15,281	10,350	100,569

DREDGE NO. 5 RANDOLPH McDONALD—DOUCET'S LANDING.

Hard-pan.....	.....	2,943	8,646	5,510	.....	.....	.....	.....	.....	.....	.....	.....	17,099
Boulders.....	.....	.....	2,998	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,998
Clay.....	.....	1,062	19,704	5,016	3,962	.....	.....	.....	.....	.....	.....	.....	29,744
Clay and Stone.....	5,872	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,872
Sand ordinary.....	2,362	7,216	9,568	2,706	.....	.....	.....	.....	.....	.....	.....	.....	19,490
Sand—very fine.....	18,262	2,916	2,916	1,120	.....	.....	.....	.....	.....	.....	.....	.....	6,418
Mud.....	.....	18,882	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	37,144
Totals.....	26,516	30,103	43,832	14,352	3,962	.....	.....	.....	.....	.....	.....	.....	118,765

DREDGE NO. 6 RANDOLPH MACDONALD—RIV. DU LOUP EN HAUT.

Clay and Sand.....	22,390	21,915	26,875	11,600	.....	.....	.....	.....	.....	.....	.....	.....	82,780
Sand—ordinary.....	.....	.....	.....	6,600	.....	.....	.....	.....	.....	.....	.....	.....	6,600
Totals.....	22,390	21,915	26,875	18,200	.....	.....	.....	.....	.....	.....	.....	.....	89,380

6-7 EDWARD VII., A. 1907

CLASSIFICATION AND QUANTITIES of Material removed by Dredges during the Year ended 30th June, 1906.

DREDGE 'LITTLE GIANT' COHEN & SON—HAWKESBURY, ST. PLACIDE AND OKA.

Description of Material Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Hardpan.....	2,133	10,056	2,423										14,612
Boulders.....	1,786												1,786
Clay and Boulders.....	2,933	2,584	5,635	8,890	5,670						6,300	17,710	49,732
Clay and Stone.....	2,214			3,790									2,214
Mud.....													3,790
Totals.....	9,066	12,640	8,118	12,670	5,670						6,300	17,710	72,174

DREDGE No. 4, PENETANG, DG. CO.—MATCHEDASH.

Clay.....	13,932	17,176	18,000	16,818									55,926
Clay and Stone.....				1,120									1,120
Totals.....	13,932	17,176	18,000	17,938									67,046

DREDGE 'OTTAWA', MANLEY & CO.—RONDEAU, PORT STANLEY.

Clay and Sand.....	11,100	11,350	12,150	9,700	10,350					15,900	19,800	24,033	114,833
Mud.....	14,950	11,200	1,900	7,000									35,050
Totals.....	26,050	22,550	14,050	16,700	10,350					15,900	19,800	24,033	149,483

SESSIONAL PAPER No. 19

DREDGE 'QUEBEC,' GEN'L CONST'N CO.—L'ASSOMPTION, HUDSON, BEAUHARNOIS.

Boulders.....	16,545	45 9,775	14,850	8,330	6,336	.....	.....	10,600	11,250 2,000	45 77,725 2,000
Clay and gumbo.....										
Clay.....										
Sand—ordinary and gravel.....				2,040	1,890 2,000					3,930 2,000
Sand—and clay.....										
Totals.....	16,545	9,820	14,850	10,370	10,285			10,600	12,250	85,700

DREDGE 'No 15,' BOWMAN.—SAUGEEN RIV.

Hard-pan.....										10,560
Clay and Stone.....										3,954
Totals.....										14,554

DREDGE 'No. 7,' PENDERGAST.—MATCHEDASH.

Boulders.....	1,000	500	10,700	11,500	4,150	.....	.....	.....	.....	1,000
Sand and gravel.....	9,400	12,100	10,700	11,500	4,150	.....	.....	.....	.....	47,850
Totals.....	10,400	12,600	10,700	11,500	4,150	.....	.....	.....	.....	49,350

DREDGE 'No. 1,' T. F. M. Co.—BLANCHE SHOALS.

Clay and sand.....	14,250	5,250	11,550	14,750	3,000	.....	.....	.....	9,875	61,425
Sand—ordinary.....	500	7,750	1,500	.....	4,300	.....	.....	.....	.....	14,100
Totals.....	14,750	13,000	13,350	14,750	7,300	.....	.....	2,450	9,875	75,525

DREDGE 'No. 4,' GEN'L CONST'N CO.—GRAHAM, ST. FRANCOIS, NORTH RIVER, ST. ANDREWS.

Hard-pan.....	300	11,825	.....	2,447	.....	.....	.....	.....	.....	300
Clay.....	20,065	3,667	852	.....	715	.....	.....	.....	3,110	34,037
Sand—ordinary.....		4,507	16,968	13,119	7,205	.....	.....	.....	.....	8,364
Sand—very fine.....						.....	.....	.....	.....	41,799
Totals.....	20,365	20,019	17,820	15,566	7,920	.....	.....	.....	3,110	84,800

6-7 EDWARD VII., A. 1907

CLASSIFICATION AND QUANTITIES OF MATERIAL REMOVED BY DREDGES DURING THE YEAR ENDED 30th JUNE 1906.—Continued.

DREDGE 'MEADE,' BOONE.—PORT STANLEY, PORT DOVER.

Description of Material dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Gravel and sand.	13,832	24,978	23,408	5,244	7,448								13,832
Clay and sand.	15,808	3,800	2,836	404									104,688
Sand—ordinary.													7,040
Totals.	29,640	28,778	26,244	5,648	7,448							27,702	125,460

DREDGE 'CHATEAUGUAY,' COHEN & SON—RIGAUD, COMO.

Hard-pan.		3,270	10,080	9,100	2,590								23,040
Boulders, clay and gravel.	9,800	6,930			2,030								18,760
Gravel.		300											300
Clay.	4,200												4,200
Sand—very fine.											8,680	23,310	31,990
Totals.	14,000	10,500	10,080	9,100	4,620						8,680	23,310	80,280

DREDGE 'ST. LAWRENCE,' DAWES & SONS—YAMASKA.

Clay, sand and gravel.	16,540	22,600	12,000	22,480	15,180								88,800
Sand—very fine.													
Totals.	16,540	22,600	12,000	22,480	15,180								88,800

SESSIONAL PAPER No. 19

DREDGE 'E. HALL No. 1', SARNIA BAY LUMBER, TIMBER & SALT CO.—POINT EDWARD, SARNIA, JOHNSON'S BEND.

Clay	19,790	24,010	17,865	9,000	20,520	1,100	10,100	19,300	9,000
Sand—ordinary	19,790	24,010	17,865	7,685	20,520	1,100	10,100	19,300	120,370
Totals	19,790	24,010	17,865	16,685	20,520	1,100	10,100	19,300	129,370

DREDGE 'TRENTON', WEDDELL—TRENT RIV., TRENTON HARB., NIGGER IS.

Hard-pan	7,790	9,095	3,885	855					21,565
Rock		1,045							1,045
Gravel and Boulders			13,490	13,300			18,270	18,540	63,600
Clay	24,510		8,610						38,380
Mud	7,885								7,885
Totals	32,395	18,050	10,070	20,995	14,155		18,270	18,540	132,475

DREDGE 'DUKE OF YORK', W. J. POUPORE CO.—ST. MAURICE RIV.

Clay	7,309			28,214	4,070				39,593
Sand—ordinary	19,340			4,813			555	33,412	39,105
Sand—sawdust	1,110	25,133	22,115		13,575				62,253
Totals	27,759	25,133	22,115	33,027	17,945		555	40,985	200,931

DREDGE 'ARNOLDI', W. L. HORTON, MARLTON DG. CO.—KINCARDINE, BAYFIELD, GODERICH, PORT ELGIN.

Hard-pan	265	860		1,022					2,147
Gravel, &c.	6,855		3,680						15,596
Clay	570	1,655	453				5,061		2,688
Sand—ordinary, &c.		1,845	3,030	1,660	220				6,755
Sand—very fine			1,735					11,253	12,988
Rock				596			234		840
Mud	5,040			1,989					915
Totals	12,730	4,370	8,445	5,570	220		5,295	11,350	48,080

6-7 EDWARD VII., A. 1907

CLASSIFICATION AND QUANTITIES OF MATERIAL REMOVED BY DREDGES DURING THE YEAR ENDED JUNE 30, 1906.
DREDGE 'CENTRAL CITY, COHEN & SON'—ST. ANDREWS, RIGAUD, OKA, ST. PLACIDE.

Description of Material dredged.	July.		August.		September.		October.		November.		December.		January.		February.		March.		April.		May.		June.		Grand Totals.	
	Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.	
Hard-pan	580						3,780		6,300																10,660	
Boulders	2,300				5,200																				5,750	
Gravel			4,095																						6,395	
Clay and Boulders			3,780		2,870																				35,750	
Sand—ordinary	170				5,280		910																		6,310	
Sand—very fine					1,400																				1,400	
Totals	3,600		7,875		14,700		4,690		6,300																62,265	

DREDGE 'No. 4 (OR CANADA) COHEN & SON'—CHATEAUGUAY, BERTHERVILLE, COMO.

Description of Material dredged.	July.		August.		September.		October.		November.		December.		January.		February.		March.		April.		May.		June.		Grand Totals.	
	Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.	
Hard-pan	3,910		5,960		2,400		7,880																		27,940	
Clay					2,020																				9,900	
Clay and Stone			580																						580	
Sand—ordinary					280		1,500																		1,780	
Sand and Clay					6,980																				6,980	
Quick sand							6,860		7,880																14,740	
Totals	3,910		6,540		11,600		16,240		7,880																61,900	

DREDGE 'No. 1 C. S. BOONE'—COLLINGWOOD, LITTLE CURRENT.

Description of Material dredged.	July.		August.		September.		October.		November.		December.		January.		February.		March.		April.		May.		June.		Grand Totals.	
	Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.		Yds.	
Hard-pan			3,588																						217	
Boulders			4,068																						3,588	
Gravel																									4,068	
Clay	8,870																								12,458	
Clay and Stone	6,742		1,231		11,215																				19,188	
Sand—ordinary			4,669																						4,669	
Rock			31				6,774		8,532								1,980								26,574	
Totals	15,612		17,775		11,215		6,774		8,532								1,980								71,362	

SESSIONAL PAPER No. 19

DREIDGE 'No. 14 (DALTON MCCARTHY) ROONE'--COLLINGWOOD, MIDLAND, LITTLE CURRENT.

16	Boulders.....	2,380	10	.....	.....	.....	.....	2,300
17	Clay Sand (Gravel).....	7,492	11,696	.....	.....	.....	.....	42,061
17	and Boulders.....	9,150	150	.....	5,990	6,100	3,000	36,398
17	Rock.....	.....	.....	5,723	.....	.....	5,677	15,636
17	Mud.....	.....	.....	300	.....	.....	.....	3,681
	Totals.....	9,881	11,856	9,104	8,113	6,100	8,677	84,467

FRANK' BOWMAN—WIARTON, OWEN SOUND.

Boulders.....	280	840	980	.....	.....	.....	.....	.....	2,100
Clay and Sand.....	34,206	28,560	17,635	12,955	8,947	.....	.....	.....	182,658
Clay and Stone.....	700	.....	.....	.....	.....	.....	.....	.....	700
Sand—ordinary.....	8,213	4,340	9,985	12,965	3,848	.....	.....	.....	39,901
Sand—very fine.....	.....	3,780	.....	.....	13,865	.....	.....	.....	3,780
Mud.....	.....	.....	.....	.....	.....	6,750	.....	.....	20,115
Totals.....	43,349	37,520	28,560	25,920	21,060	6,750	.....	.....	248,654

KINGSFORD' BOWMAN—PORT-ARTHUR AND FORT WILLIAM, CALLINGWOOD.

Clay.....	20,093	27,351	537	17,677	10,330	.....	.....	.....	256	48,237
Sand—ordinary.....			17,678						43,685	43,685
Rock.....									3,126	3,126
Totals.....	20,093	27,351	18,215	17,677	10,330	.....	.....	.....	3,382	97,048

DREDGE No. 1 GREAT LAKES DREDGE Co.

Hard-pan.....		65				65
Clay.....	10,091	23,334	15,452	11,017		50,894
Sand—ordinary.....			20,188			20,188
Sand—very fine.....	2,402		1,662	11,017		49,038
Totals.....	12,493	23,334	21,855	30,904	16,974	129,180

6-7 EDWARD VII., A. 1907

CLASSIFICATION AND QUANTITIES OF MATERIAL REMOVED BY DREDGES DURING THE YEAR ENDED JUNE 30, 1906—Continued.
DREDGE NO. 6 BOWMAN.—PORT ARTHUR, FORT WILLIAM & KAMINISTIGUIA RIVER.

Description of Material dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Clay.....	20,104	31,623	20,612	37,671	50,737	.....	.....	.....	.....	.....	.....	.....	160,747
Clay and stone.....	6,624	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,624
Sand—ordinary.....	6,546	31,624	20,612	37,671	.....	.....	.....	.....	.....	.....	.....	.....	96,453
Sand—very fine.....	20,105	.....	9,086	.....	11,336	.....	.....	.....	.....	.....	29,821	75,203	145,501
Totals.....	53,279	63,247	50,260	75,342	62,073	.....	.....	.....	.....	.....	29,821	75,203	409,225

DREDGE NO. 5 GREAT LAKES DREDGE CO.—PORT ARTHUR AND FORT WILLIAM.

Gravel, sand and clay.....	.....	5,782	3,139	24,554	26,312	6,276	.....	.....	.....	.....	30,732	5,249	8,921
Clay.....	31,069	45,317	30,619	7,734	.....	.....	.....	.....	.....	.....	.....	.....	200,138
Clay and stone.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,734
Sand—ordinary.....	31,069	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31,069
Sand—very fine.....	.....	.....	22,931	24,554	26,312	6,277	.....	.....	.....	.....	.....	.....	80,074
Mud.....	5,277	3,971	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9,248
Totals.....	67,415	55,070	56,689	56,842	52,624	12,453	.....	.....	.....	.....	30,732	5,249	337,174

DREDGE 'PONTIAC' W. J. POUPORE CO.—BATISCAN AND RIVIERE-DU-LOUP (EN HAUT).

Clay.....	21,760	31,920	9,600	7,805	42,274	.....	.....	.....	.....	.....	18,400	.....	131,769
Clay and sand.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	82,526
Sand—ordinary.....	3,600	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,600
Totals.....	25,360	31,920	9,600	7,805	42,274	.....	.....	.....	.....	.....	18,400	82,526	167,894

SESSIONAL PAPER No. 19

DREDGE 'No. 9 OWEN SOUND DREDGE AND CONSTRUCTION Co.—MIDLAND.

Hard pan.....	6,375	4,650	.....	.....	.....	.....	.....	.....	11,026
Gravel, clay, sand and boulders.....	.....	4,900	9,500	6,850	2,550	.....	5,700	8,675	48,825
Clay.....	3,250	.....	.....	.....	.....	.....	.....	.....	3,250
Sand—very fine.....	.....	6,600	5,700	.....	.....	.....	.....	.....	12,300
Totals.....	9,625	16,150	15,200	6,850	2,550	.....	5,700	8,675	75,400

DREDGE 'ST. PIERRE'—GODEFROYE AND RIVER ST. MAURICE.

Clay.....	.....	.....	8,400	750	7,110	.....	.....	.....	16,260
Clay and sand.....	.....	.....	.....	2,180	.....	.....	.....	.....	38,580
Sand—ordinary.....	9,360	16,560	12,960	15,065	.....	.....	.....	20,060	53,975
Totals.....	9,360	16,560	21,360	15,845	7,110	.....	.....	20,060	108,815

DREDGE 'OTTO.' CAN. IMPVT. CO.—RIV. JESUS.

Boulders, clay and sand.....	.....	4,870	4,460	605	2,830	.....	.....	.....	19,775
Clay.....	.....	174	2,460	6,725	380	.....	.....	.....	9,690
Totals.....	.....	5,045	6,920	7,330	3,160	.....	.....	1,910	29,465

DREDGE 'No. 2, T. F. M. Co.'—BLANCHE SHOALS.

Sand—Ordinary.....	.....	11,086	14,264	13,916	7,030	.....	.....	.....	57,316
Totals.....	.....	11,086	14,264	13,916	7,030	.....	.....	11,020	57,316

DREDGE 'No. 6, W. H. PENDERGAST'—BATISCAN.

Sand—Ordinary.....	.....	.....	.....	.....	.....	.....	.....	.....	4,300
Totals.....	.....	.....	.....	.....	.....	.....	.....	.....	4,300

6-7 EDWARD VII., A. 1907

CLASSIFICATION AND QUANTITIES OF MATERIAL REMOVED BY DREDGES DURING THE YEAR ENDED JUNE 30, 1906—Continued.

DREDGE 'No. 4, OWEN SOUND DG. & CONSTN. CO.'—MIDLAND.

Description of Material Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Boulders, gravel, sand and clay.....												3,330	3,330
Totals.....												3,330	3,330

DREDGE 'DOMINION' BOWMAN.—PT. ARTHUR & FORT WILLIAM.

Clay and sand.....					55,466	60,437				9,726	102,413	102,340	330,382
Totals.....					55,466	60,437				9,726	102,413	102,340	330,382

DREDGE 'WILCOX' CHATHAM DG. CO.—BELLE RIVER.

Clay and sand.....		11,160		5,625									16,785
Totals.....		11,160		5,625									16,785

DREDGE 'No. 3,' DOMN. DG. CO.—POINT EDWARD.

Gravel.....											4,500	7,000	11,500
Totals.....											4,500	7,000	11,500

DREDGE 'SIMCOE' BROWN & AYLMER, BRAVEBENTON.				
Clay, sand and gravel	1,066	10,660	11,726	
Totals	1,066	10,660	11,726	

DREDGE 'PRINCE LOUIS' W. J. POUPORE & CO.—RIV. MASKINONGÉ.

[illegible]

DREDGE 'EDWARDS BROS. No. 3,' CANADA SAW MILL CO.—BLIND RIVER.

[illegible]

DREDGE 'I. X. L.' WEDDELL.—PORT ARTHUR.

[illegible]

DREDGE, ST. LAWRENCE' MANLEY CO.--PORT BURWELL.

Clay, sand and gravel
-----------------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

NOTE. - 45,033 cub. yds. of above was allowance for 287 3/4 hours pulling piles.

DREDGE 'WEDDELL DG. CO.'

[illegible]

6-7 EDWARD VII., A. 1907

CLASSIFICATION OF DISBURSEMENTS of the Dredges during the Year ended 30th June, 1906.

DREDGE No. 2 DOMN DREDGE AND CONSTRUCTION CO.

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages	78 00	81 00	78 00	78 00	68 00					68 00	81 00		525 00
Equipment										136 07			136 07
Contingencies	6,069 60	4,966 09	3,253 48	2,747 28	2,704 96					2,442 75	3,890 25	2,537 50	28,686 91
Totals	6,147 60	5,047 09	3,336 48	2,825 28	2,869 96					2,641 82	3,901 25	2,537 50	29,347 96
Working expenses	6,147 60	5,047 09	3,336 48	2,825 28	2,869 96					2,641 82	3,901 25	2,537 50	29,347 96
Totals	6,147 60	5,047 09	3,336 48	2,825 28	2,869 96					2,641 82	3,901 25	2,537 50	29,347 96

DREDGE No. 5 R. McDONALD.

Wages	103 50	91 50	88 50	88 50	30 00								412 00
Equipment	21 00												21 00
Repairs	18 20												18 20
Contingencies	2,523 24	3,373 80	5,505 58	3,787 81	700 92					184 06			16,816 60
Totals	2,665 94	3,765 30	5,594 08	3,876 31	730 92					184 06			16,816 60
Working expenses	2,647 74	3,765 30	5,594 08	3,876 31	730 92					184 06			16,798 40
Repairs, ordinary	18 20												18 20
Totals	2,665 94	3,765 30	5,594 08	3,876 31	730 92					184 06			16,816 60

SESSIONAL PAPER No. 19

DREDGE No. 6 R. McDONALD.

Wages.....	65 00	79 50	86 85	05 00	.....	.....	.....	235 45
Contingencies.....	2,818 65	2,739 37	3,369 37	2,275 00	.....	.....	.....	11,192 39
Totals.....	2,883 65	2,818 87	3,445 32	2,340 00	.....	.....	.....	11,487 84
Working expenses.....	2,883 65	2,818 87	3,445 32	2,340 00	.....	.....	.....	11,487 84
Totals.....	2,883 65	2,818 87	3,445 32	2,340 00	.....	.....	.....	11,487 84

DREDGE 'LITTLE GIANT' L. COHEN & SON.

Wages.....	67 50	67 50	35 00	65 00	30 00	.....	.....	78 00	373 00
Stores.....	4,765 20	7,699 20	3,618 50	5,135 50	2,351 50	.....	.....	5,644 30	7 85
Contingencies.....	4,830 70	7,766 70	3,661 35	5,200 50	2,381 50	.....	.....	2,079 00	31,491 20
Totals.....	4,830 70	7,766 70	3,661 35	5,200 50	2,381 50	.....	.....	2,109 00	31,872 06
Working expenses.....	4,830 70	7,766 70	3,661 35	5,200 50	2,381 50	.....	.....	2,109 00	31,872 06
Totals.....	4,830 70	7,766 70	3,661 35	5,200 50	2,381 50	.....	.....	2,109 00	31,872 06

DREDGE No. 4 PENETANG DREDGE Co.

Wages.....	44 35	92 50	70 90	76 10	.....	.....	.....	.....	283 85
Contingencies.....	1,950 48	2,404 64	2,520 00	2,600 92	.....	.....	.....	.....	9,476 04
Totals.....	1,994 83	2,497 14	2,590 90	2,677 02	.....	.....	.....	.....	9,759 89
Working expenses.....	1,994 83	2,497 14	2,590 90	2,677 02	.....	.....	.....	.....	9,759 89
Totals.....	1,994 83	2,497 14	2,590 90	2,677 02	.....	.....	.....	.....	9,759 89

6-7 EDWARD VII., A. 1907

CLASSIFICATION of disbursements by Dredges during the Year ending June 30, 1906—Continued.
DREDGE 'OTTAWA' MANLEY Co.

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	78 00	81 00	78 00	78 00	78 00					54 00	76 77	78 00	601 77
Contingencies.....	4,467 00	3,837 00	2,293 50	2,825 48	1,656 00					2,544 00	2,940 00	3,364 62	23,927 60
Totals.....	4,545 00	3,918 00	2,371 50	2,903 48	1,734 00					2,598 00	3,016 77	3,442 62	24,529 37
Working expenses.....	4,545 00	3,918 00	2,317 50	2,903 48	1,734 00					2,598 00	3,016 77	3,442 62	24,529 37
Totals.....	4,545 00	3,918 00	2,317 50	2,903 48	1,734 00					2,598 00	3,016 77	3,442 62	24,529 37

DREDGE 'QUEBEC' (GENERAL CONSTRUCTION CO.)

Wages.....	78 00	81 00	78 00	78 00	42 00						66 00	78 00	501 00
Contingencies.....	2,256 74	1,339 44	2,022 81	1,414 47	2,088 21						3,074 00	3,842 50	16,018 17
Totals.....	2,334 74	1,420 44	2,100 81	1,492 47	2,110 21						3,140 00	3,920 50	16,519 17
Working expenses.....	2,334 74	1,420 44	2,100 81	1,492 47	2,110 21						3,140 00	3,920 50	16,519 17
Totals.....	2,334 74	1,420 44	2,100 81	1,492 47	2,110 21						3,140 00	3,920 50	16,519 17

DREDGE 'No. 15,' A. F. BOWMAN.

Wages.....	49 75												49 75
Contingencies.....	8,177 60												8,177 60
Totals.....	8,227 35												8,227 35
Working expenses.....	8,227 35												8,227 35
Totals.....	8,227 35												8,227 35

SESSIONAL PAPER No. 19

DREDGE 'No. 7,' PRENDERGAST.

Wages.....	44 35	100 00	54 00	82 79	34 60	.....	.....	.....	316 74
Contingencies.....	1,900 00	2,065 00	1,520 00	1,691 00	587 50	.....	.....	.....	7,766 50
Totals.....	1,944 35	2,165 00	1,574 00	1,776 79	622 10	.....	.....	.....	8,083 24
Working expenses.....	1,944 35	2,165 00	1,574 00	1,776 79	622 10	.....	.....	.....	8,083 24
Totals.....	1,944 35	2,165 00	1,574 00	1,776 79	622 10	.....	.....	.....	8,083 24

DREDGE 'T. F. M., No. 1,' MOORE CO.

Wages.....	65 00	82 50	65 00	65 00	40 00	.....	.....	36 00	78 00	431 50
Contingencies.....	2,950 00	2,600 00	2,771 50	2,950 00	1,470 00	.....	.....	514 50	2,673 75	15,328 75
Totals.....	3,015 00	2,682 50	2,836 50	3,015 00	1,510 00	.....	.....	560 50	2,151 75	15,761 25
Working expenses.....	3,015 00	2,682 50	2,836 50	3,015 00	1,510 00	.....	.....	550 50	2,151 75	15,761 25
Totals.....	3,015 00	2,682 50	2,836 50	3,015 00	1,510 00	.....	.....	550 50	2,151 75	15,761 25

DREDGE 'No. 4,' GENERAL CONSTRUCTION CO.

Wages.....	65 00	65 00	65 00	65 00	35 00	29 20	.....	.....	42 00	366 20
Stores.....	2 15	2 15	.....	.....	.....	.....	.....	.....	2 15	.....
Contingencies.....	2,625 04	3,351 72	4,403 88	3,677 04	1,937 10	.....	.....	.....	1,710 50	17,705 28
Totals.....	2,690 04	3,418 87	4,468 88	3,742 04	1,972 10	29 20	.....	.....	1,752 50	18,073 63
Working expenses.....	2,690 04	3,418 87	4,468 88	3,742 04	1,972 10	29 20	.....	.....	1,752 50	18,073 63
Totals.....	2,690 04	3,418 87	4,468 88	3,742 04	1,972 10	29 20	.....	.....	1,752 50	18,073 63

DREDGE 'MEADE,' C. S. BOONE.

Wages.....	78 00	81 00	78 00	78 00	78 00	.....	.....	12 00	78 75	483 75
Contingencies.....	4,801 68	4,969 02	4,574 92	2,882 36	2,296 15	.....	.....	688 50	3,670 52	23,353 15
Totals.....	4,879 68	5,050 02	4,652 92	2,460 36	2,374 15	.....	.....	670 50	3,749 27	23,836 90
Working expenses.....	4,879 68	5,050 02	4,652 92	2,460 36	2,374 15	.....	.....	670 50	3,749 27	23,836 90
Totals.....	4,879 68	5,050 02	4,652 92	2,460 36	2,374 15	.....	.....	670 50	3,749 27	23,836 90

6-7 EDWARD VII., A. 1907

CLASSIFICATIONS OF DISBURSEMENTS OF the Dredges during the Year ended June 30, 1906—Continued.
DREDGE 'CHATEAUGUAY' COHEN & SONS.

Items.	July.	August.	Septem-ber.	October.	Novem-ber.	Decem-ber.	January.	February.	March.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	ta.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	65 00	67 50	65 00	65 00	40 00	.....	.....	.....	.....	.....	40 00	65 00	407 50
Equipment.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6 00	.....	6 00
Contingencies.....	5,250 00	4,567 00	6,564 00	5,915 00	2,587 00	.....	.....	.....	.....	.....	2,387 00	6,410 25	33,680 25
Totals.....	5,315 00	4,634 50	6,629 00	5,980 00	2,637 00	.....	.....	.....	.....	.....	2,433 00	6,475 25	34,103 75
Working expenses.....	5,315 00	4,634 50	6,629 00	5,980 00	2,637 00	.....	.....	.....	.....	.....	2,433 00	6,475 25	34,103 75
Totals.....	5,315 00	4,634 50	6,629 00	5,980 00	2,637 00	.....	.....	.....	.....	.....	2,433 00	6,475 25	34,103 75
DREDGE 'ST. LAWRENCE' DAVIS & SON.													
Wages.....	67 00	67 50	67 00	69 75	42 50	.....	.....	.....	.....	.....	.....	.....	318 75
Contingencies.....	3,308 00	4,120 00	2,400 00	4,496 00	3,086 00	.....	.....	.....	.....	.....	.....	.....	17,760 00
Totals.....	3,375 00	4,187 50	2,467 00	4,565 75	3,078 50	.....	.....	.....	.....	.....	.....	.....	18,073 75
Working expenses.....	3,375 00	4,187 50	2,467 00	4,565 75	3,078 50	.....	.....	.....	.....	.....	.....	.....	18,073 75
Totals.....	3,375 00	4,187 50	2,467 00	4,565 75	3,078 50	.....	.....	.....	.....	.....	.....	.....	18,073 75
DREDGE 'E. HALL No. 1.'													
Wages.....	.....	81 00	81 76	147 55	78 55	24 00	.....	.....	.....	.....	39 00	78 00	529 86
Contingencies.....	4,377 80	5,285 20	5,026 80	1,380 00	5,759 60	242 00	.....	.....	.....	.....	1,717 00	3,281 00	27,519 40
Totals.....	4,377 80	5,366 20	5,608 56	1,477 55	5,838 15	266 00	.....	.....	.....	.....	1,756 00	3,359 00	28,049 26
Working expenses.....	4,377 80	5,366 20	5,608 56	1,477 55	5,838 15	266 00	.....	.....	.....	.....	1,756 00	3,359 00	28,049 26
Totals.....	4,377 80	5,366 20	5,608 56	1,477 55	5,838 15	266 00	.....	.....	.....	.....	1,756 00	3,359 00	28,049 26

SESSIONAL PAPER No. 19

DREDGE 'TRENTON R. WEDDELL.

Wages.....	75 00	81 00	78 00	78 00	54 00	.....	.....	.....	.....	78 00	83 00	597 00
Contingencies.....	5,021 23	5,095 80	6,069 00	5,694 80	3,709 75	.....	.....	.....	.....	5,298 30	5,376 60	36,285 48
Totals.....	5,096 23	5,176 80	6,177 00	5,762 80	3,763 75	.....	.....	.....	.....	5,376 30	5,459 60	38,812 48
Working expenses,...	5,096 23	5,176 80	6,177 00	5,762 80	3,763 75	.....	.....	.....	.....	5,376 30	5,459 60	38,812 48
Totals.....	5,096 23	5,176 90	6,177 00	5,762 80	3,763 75	.....	.....	.....	.....	5,376 30	5,459 60	38,812 48

DREDGE 'DUKE OF YORK' W. J. POUPORE.

Wages.....	111 00	72 93	72 94	72 95	72 98	.....	.....	.....	.....	96 30	91 00	560 06
Contingencies.....	4,185 85	3,831 45	3,237 81	4,935 84	2,774 75	.....	.....	.....	.....	4,106 58	4,213 11	27,285 39
Totals.....	4,296 85	3,904 38	3,310 75	5,008 79	2,847 68	.....	.....	.....	.....	4,202 88	4,304 11	27,875 44
Working expenses,...	4,296 85	3,094 38	3,310 75	5,008 79	2,847 68	.....	.....	.....	.....	4,202 88	4,304 11	28,975 44
Totals.....	4,296 85	3,904 38	3,310 75	5,008 79	2,848 68	.....	.....	.....	.....	4,202 88	4,304 11	27,875 44

DREDGE 'ARNOLDI' MARTIN DREDGING CO.

Wages.....	87 40	12 00	60 00	78 00	14 50	.....	.....	.....	.....	42 00	69 00	362 90
Equipment.....	2,777 50	2,369 50	1,689 00	2,688 65	.....	.....	.....	.....	.....	2,005 00	3,460 00	13 75
Contingencies.....	2,864 90	2,385 25	1,749 00	2,666 65	14 50	.....	.....	.....	.....	2,047 00	3,529 00	14,879 65
Totals.....	2,864 90	2,385 25	1,749 00	2,666 65	14 50	.....	.....	.....	.....	2,047 00	3,529 00	15,256 30
Working expenses,...	2,864 90	2,385 25	1,749 00	2,666 65	14 50	.....	.....	.....	.....	2,047 00	3,529 00	15,256 30
Totals.....	2,864 90	2,385 25	1,749 00	2,666 65	14 50	.....	.....	.....	.....	2,047 00	3,529 00	15,256 30

6-7 EDWARD VII., A. 1907

CLASSIFICATION OF DISBURSEMENTS OF the Dredges during the year ended June 30, 1906.
'CENTRAL CITY' COHEN & SON.

Items.	July.	August.	Septem-ber.	October.	Novem-ber.	Decem-ber.	January.	February.	March.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	57 00	81 00	78 00	48 00	45 00						37 50	65 00	411 50
Contingencies.....	2,414 80	3,435 25	5,518 25	2,748 20	4,095 00						3,141 60	6,791 40	28,344 50
Totals.....	2,471 80	3,716 25	5,596 25	2,796 20	4,140 00						3,179 10	6,856 40	28,756 00
Working expenses.....	2,471 80	3,716 25	5,596 25	2,796 20	4,140 00						3,179 10	6,856 40	28,756 00
Totals.....	2,471 80	3,716 25	5,596 25	2,796 20	4,140 00						3,179 10	6,856 40	28,756 00
'No. 4, CANADA' COHEN & SON.													
Wages.....	57 00	81 00	82 61	97 00	57 00						10 00	65 00	449 61
Repairs.....	2,541 50	4,175 28	3,946 23	3,360 30	1,970 00						513 00	8,418 90	24,325 21
Contingencies.....	2,598 50	4,256 28	3,428 84	3,462 35	2,027 00						523 00	8,483 90	24,779 87
Totals.....	2,598 50	4,256 28	3,428 84	3,462 35	2,027 00						523 00	8,483 90	24,779 87
Working expenses.....	2,598 50	4,256 28	3,428 84	3,462 35	2,027 00						523 00	8,483 90	24,774 82
Repairs, ordinary.....	2,598 50	4,256 28	3,428 84	3,462 35	2,027 00						523 00	8,483 90	24,774 82
Totals.....	2,598 50	4,256 28	3,428 84	3,462 35	2,027 00						523 00	8,483 90	24,779 87
'No. 1' C. S. BOONE.													
Wages.....	78 00	81 00	66 00	11,725 00	14,806 54					42 00	56 29	78 98	402 27
Contingencies.....	26,062 80	5,859 60	3,925 25	11,725 00	14,806 54					3,482 00	5,869 50	14,751 30	86,491 99
Totals.....	26,160 80	5,940 60	3,991 25	11,725 00	14,806 54					3,474 00	5,925 79	14,870 28	86,894 26
Working expenses.....	26,160 80	5,940 60	3,991 25	11,725 00	14,806 54					3,474 00	5,925 79	14,870 28	86,894 26
Totals.....	26,160 80	5,940 60	3,991 25	11,725 00	14,806 54					3,474 00	5,925 79	14,870 28	86,894 26

SESSIONAL PAPER No. 19

No. 14 or D. MCCARTHY ' C. S. ROONE.

Wages.....	86 30	94 40	78 16	89 70	78 97	37 56	.....	.....	42 00	78 00	78 00	683 08
Contingencies.....	21,045 00	5,494 70	.....	19,411 90	5,181 50	2,975 00	.....	.....	2,074 00	10,860 89	27,137 06	94,180 15
Totals.....	21,131 30	5,589 10	78 16	19,501 60	5,260 47	3,012 56	.....	.....	2,116 00	10,938 99	27,215 06	94,843 23
Working expenses.....	21,131 30	5,589 10	78 16	19,501 60	5,260 47	3,012 56	.....	.....	2,116 00	10,938 99	27,215 06	94,843 23
Totals.....	21,116 30	5,589 10	78 16	19,501 60	5,260 47	3,012 56	.....	.....	2,116 00	10,938 99	27,215 06	94,843 23

'FRANK' A. F. BOWMAN.

Wages.....	172 00	173 25	114 25	78 00	117 70	2,816 10	.....	.....	62 15	62 00	78 00	857 35
Contingencies.....	8,240 66	6,945 40	4,820 85	4,361 85	1,115 77	.....	.....	.....	357 08	4,641 98	4,828 27	38,127 96
Totals.....	8,412 66	7,118 65	4,935 10	4,439 85	1,233 47	2,816 10	.....	.....	419 23	4,703 98	4,906 27	38,985 31
Working expenses.....	8,412 66	7,118 65	4,935 10	4,439 85	1,233 47	2,816 10	.....	.....	419 23	4,703 98	4,906 27	38,985 31
Totals.....	8,412 66	7,118 65	4,935 10	4,439 85	1,233 47	2,816 10	.....	.....	419 23	4,703 98	4,906 27	38,985 31

'KINGSFORD' A. F. BOWMAN.

Wages.....	78 00	188 64	183 77	124 08	199 94	.....	.....	.....	.....	.....	86 29	840 72
Contingencies.....	2,813 02	3,929 14	3,253 20	3,157 63	1,833 50	.....	.....	.....	.....	.....	7,266 60	22,213 09
Totals.....	2,891 02	4,117 78	3,416 97	3,261 71	2,033 44	.....	.....	.....	.....	.....	7,352 89	23,073 81
Working expenses.....	2,891 02	4,117 78	3,416 97	3,261 71	2,033 44	.....	.....	.....	.....	.....	7,352 89	23,073 81
Totals.....	2,891 02	4,117 78	3,416 97	3,261 71	2,033 44	.....	.....	.....	.....	.....	7,352 89	23,073 81

6-7 EDWARD VII., A. 1907

CLASSIFICATION OF DISBURSEMENTS of the Dredges during the Year ended 30th June, 1906.
DREDGE 'No. 1' GREAT LAKES DREDGE COMPANY, A. F. BOWMAN.

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	104 00	188 64	183 77	124 08	199 94						67 50	156 00	1,023 93
Contingencies.....	1,967 44	3,266 76	3,910 80	5,485 60	3,910 66						270 79	1,855 66	20,667 71
Totals.....	2,071 44	3,455 40	4,094 57	5,609 68	4,110 60						338 29	2,011 66	21,711 64
Working expenses.....	2,091 44	3,455 40	4,094 67	5,609 63	4,110 60						338 29	2,011 66	21,711 64
Totals.....	2,091 44	3,455 40	4,094 67	5,609 68	4,110 60						338 29	2,011 66	21,711 64

DREDGE 'No. 6' A. F. BOWMAN.

Wages.....	104 00	188 64	183 77	124 08	199 94						80 00	104 00	984 43
Contingencies.....	7,506 30	7,589 64	6,911 41	9,041 04	7,592 97						5,293 19	8,782 47	52,717 02
Totals.....	7,610 30	7,778 28	7,095 18	9,165 12	7,792 91						5,373 19	8,886 47	53,701 45
Working expenses.....	7,610 30	7,778 28	7,095 18	9,165 12	7,792 91						5,373 19	8,886 47	53,701 45
Totals.....	7,610 30	7,778 28	7,095 18	9,165 12	7,792 91						5,373 19	8,886 47	53,701 45

DREDGE 'No. 5' GREAT LAKES DREDGE COMPANY, A. F. BOWMAN.

Wages.....	105 50	188 64	183 77	124 08	199 94	56 00					84 00	104 00	1,015 93
Contingencies.....	8,896 42	9,529 80	8,285 74	10,086 38	9,340 76	2,210 37					4,429 15	629 88	53,411 50
Totals.....	9,001 92	9,718 44	8,469 51	10,213 46	9,540 70	2,266 37					4,513 15	733 88	54,457 43
Working expenses.....	9,001 92	9,718 44	8,469 51	10,213 46	9,540 70	2,266 37					4,513 15	733 88	54,457 43
Totals.....	9,001 92	9,718 44	8,469 51	10,213 46	9,540 70	2,266 37					4,513 15	733 88	54,457 43

SESSIONAL PAPER No. 19

DREDGE 'PONTIAC' W. J. POUPORE.

Wages.....	60 00	77 50	18 75	1,170 75	42 00	.....	.....	.....	50 00	70 00	318 25
Contingencies.....	3,805 00	4,788 50	1,440 00	.....	6,341 10	.....	.....	.....	2,519 30	3,301 05	23,435 70
Totals.....	3,865 00	4,866 00	1,458 75	1,170 75	6,383 10	.....	.....	.....	2,569 30	3,431 05	23,743 95
Working expenses.....	3,865 00	4,866 00	1,458 75	1,170 75	6,383 10	.....	.....	.....	2,569 30	3,431 05	23,743 95
Totals.....	3,865 00	4,866 00	1,458 75	1,170 75	6,383 10	.....	.....	.....	2,569 30	3,431 05	23,743 95

DREDGE 'No. 9' OWEN SOUND DREDGE AND CONSTRUCTION COMPANY.

Wages.....	86 30	94 46	92 40	89 76	78 97	37 55	.....	.....	80 25	123 80	717 03
Contingencies.....	5,245 50	10,410 00	10,757 00	3,426 00	5,181 50	2,975 00	.....	.....	2,949 50	7,465 56	50,347 06
Totals.....	5,331 80	10,504 40	10,849 40	3,514 70	5,260 47	3,012 55	.....	.....	3,029 75	7,589 36	51,064 09
Working expenses.....	5,331 80	10,504 40	10,849 40	3,514 70	5,260 47	3,012 55	.....	.....	3,029 75	7,589 36	51,064 09
Totals.....	5,331 80	10,504 40	10,849 40	3,515 70	5,260 47	3,012 55	.....	.....	3,029 75	7,589 36	51,064 09

DREDGE 'ST. PIERRE', ST. PIERRE.

Wages.....	32 50	32 50	32 50	66 37	22 50	.....	.....	.....	57 00	42 00	285 37
Contingencies.....	1,404 00	2,484 00	3,204 00	1,306 80	.....	1,725 75	.....	.....	2,483 80	1,522 40	14,180 75
Totals.....	1,436 50	2,516 50	3,236 50	1,373 17	22 50	1,725 75	.....	.....	2,540 00	1,564 40	14,416 12
Working expenses.....	1,436 50	2,516 50	3,236 50	1,373 17	22 50	1,725 75	.....	.....	2,540 00	1,564 40	14,416 12
Totals.....	1,436 50	2,516 50	3,236 50	1,373 17	22 50	1,725 75	.....	.....	2,540 00	1,564 40	14,416 12

6-7 EDWARD VII., A. 1907

CLASSIFICATION OF DISBURSEMENTS OF the Dredges during the Year ended June 30, 1806—Continued.
DREDGE 'OTTO'; CAN. IMPROVEMENT CO.

Items.	July.	August.	Septem-ber.	October.	Novem-ber.	Decem-ber.	January.	February.	March.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....		94 50	78 00	91 00	80 00						58 75	78 00	480 25
Contingencies.....		1,869 13	2,288 20	1,874 51	1,148 60						592 10	1,602 00	9,374 54
Totals.....		1,963 63	2,366 20	1,965 51	1,187 60						650 85	1,680 00	9,813 79
Working expenses.....		1,963 63	2,366 20	1,965 51	1,187 60						650 85	1,680 00	9,813 79
Totals.....		1,963 63	2,366 20	1,965 51	1,187 60						650 85	1,680 00	9,813 79
DREDGE T. F. M. No. 2, T. F. MOORE CO.													
Wages.....		52 50	65 00	65 00	40 00								222 50
Contingencies.....		2,218 46	2,862 90	2,783 20	1,406 00							2,314 20	11,576 76
Totals.....		2,270 96	2,917 90	2,848 20	1,448 00							2,314 20	11,799 75
Working expenses.....		2,270 95	2,917 90	2,848 20	1,448 00							2,314 20	11,799 25
Totals.....		2,270 95	2,917 90	2,848 20	1,448 00							2,314 20	11,799 25
DREDGE No. 6, PRENDERGAST.													
Wages.....												22 50	22 50
Contingencies.....												565 90	565 90
Totals.....												588 40	588 40
Working expenses.....												588 40	588 40
Totals.....												588 40	588 40

SESSIONAL PAPER No. 19

DREDGE NO. 4, O. S. DREDGING AND CONSTRUCTION CO.

	11 40	11 40
Wages.....	1,461 92	1,461 92
Contingencies.....	1,473 32	1,473 32
Totals	1,473 32	1,473 32
Working expenses.....	1,473 32	1,473 32
Totals	1,473 32	1,473 32

DREDGE 'DOMINION', A. F. BOWMAN.

	1994	10,727 53	107 00	108 00	84 00	498 94
Wages.....	199 94	10,727 53	1,167 12	14,463 10	11,406 55	44,419 22
Contingencies..	6,855 92					
Totals	6,855 86	10,727 53	1,274 12	14,571 10	11,489 55	44,918 16
Working expenses.....			1,274 12	14,571 10	11,489 55	44,918 16
Totals	6,855 86	10,727 53	1,274 12	14,571 10	11,489 55	44,918 16

DREDGE 'WILCOX', CHATHAM DREDGING CO.

Wages.....	39 00	78 00	78 00	36 00	231 00
Contingencies.....		2,790 00	1,406 25		4,196 25
Totals.....	39 00	2,868 00	1,484 25	36 00	4,427 25
Working expenses.....	39 00	2,868 00	1,484 25	36 00	4,427 25
Totals.....	39 00	2,868 00	1,484 25	36 00	4,427 25

6-7 EDWARD VII., A. 1907

CLASSIFICATION OF DISBURSEMENTS of the Dredges during the Year ended 30th June, 1906—Continued.

DREDGE 'No. 3,' DOMINION DREDGING CO.

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....												78 00	78 00
Contingencies.....											810 00	1,260 00	2,170 00
Totals											810 00	1,338 00	2,148 00
Working expenses.....											810 00	1,338 00	2,148 00
Totals.....											810 00	1,338 00	2,148 00

DREDGE 'SIMCOE,' BROWN & AYLMER.

Wages.....											39 00	3,076 50	39 00
Contingencies.....											755 00	3,076 50	3,831 50
Totals											794 00	3,076 50	3,870 50
Working expenses.....											794 00	3,076 50	3,870 50
Totals											794 00	3,076 50	3,870 50

DREDGE 'PRINCE LOUIS,' W. J. POUPORE.

Wages.....											58 50	65 00	118 50
Contingencies.....											1,172 16	2,092 07	3,264 23
Totals											1,225 66	2,157 07	3,382 73
Working expenses.....											1,225 66	2,157 07	3,382 73
Totals.....											1,225 66	2,157 07	3,382 73

SESSIONAL PAPER No. 19

DREDGE 'EDWARDS BROS. NO. 3,' CANADA SAW MILL CO.							
Wages.....						63 00	63 00
Contingencies.....						947 20	947 20
Totals.....						1,010 20	1,010 20
Working expenses.....						1,010 20	1,010 20
Totals						1,010 20	1,010 20
DREDGE 'I. X. L.' WEDDELL.							
Wages.....						104 00	104 00
Contingencies.....						3,717 54	3,717 54
Totals.....						3,821 54	3,821 54
Working expenses.....						3,821 54	3,821 54
Totals.....						3,821 54	3,821 54
DREDGE 'ST. LAWRENCE,' MANLEY & CO.							
Wages.....						78 00	78 00
Contingencies.....						7,580 94	7,580 94
Totals.....						7,658 94	7,658 94
Working expenses.....						7,658 94	7,658 94
Totals.....						7,658 94	7,658 94
DREDGE 'WEDDELL DREDGING CO.'							
Wages.....						21 00	21 00
Contingencies.....						21 00	21 00
Totals.....						21 00	21 00
Working expenses.....						21 00	21 00
Totals.....						21 00	21 00

PROVINCE OF MANITOBA.

DREDGING, ASSINIBOINE RIVER.

An orange peel excavator has been removing obstructions in the St. James rapids, Assiniboine river, from May 1 to June 30, 1906.

Boulders and other obstructions over a distance of 6,000 feet have been removed, and a clear width of 45 feet with 4 feet draught at low water is assured.

Excavated material is cast to each side in the form of a ridge, making the amount of material removed difficult to estimate.

Expenditure during 1905-6 was \$2,424.80.

DREDGING, LAKE MANITOBA.

Dredge *Manitoba*, from July 1 to August 12, removed 14,000 cubic yards of material, composed mostly of fine sand and clay, in forming an entrance to a harbour of refuge at Delta, on Lake Manitoba.

From August 14 to October 7, 1905, and from June 11 to June 30, 1906, 10,000 cubic yards of boulders, clay and gravel were removed in forming an entrance channel for the Manitoba Gypsum Company at Gypsumville.

From October 9 to October 21, 2,200 cubic yards of fine sand and clay were removed from the bed of the White Mud river, to give increased draught in shallow portions of the river, affording navigation for the steamers of the Manitoba Gypsum Company.

From May 28 to June 9, 1906, 2,400 cubic yards of fine sand and clay were removed from the outlet of Lake Francis.

Total expenditure during 1905-6 was \$7,943.44.

DREDGING, LAKE WINNIPEG.

(Mouth of Red River.)

During the year, dredge *Winnipeg* operated at the mouth of the Red river, maintaining present channel out into the lake, also on the new channel at the mouth of the river. Considerable difficulty seems to have attended the efforts to make the new channel navigable, owing to the filling in of material. During the year, weekly reports show a quantity of 32,000 cubic yards of material removed, consisting of fine sand and clay.

Expenditure during 1905-6 was \$16,700.12.

LAKE WINNIPEGOSIS.

Dredge *Priestman* operated during the season at the mouth of the Mossy river. From July 3 to October 21, 1905, and June 19 to June 30, 1906, a total quantity of 15,000 cubic yards of material were removed in forming a channel at the point.

Expenditure during 1905-6 was \$4,995.91.

BRITISH COLUMBIA.

DREDGING.

Columbia River, between Arrow Lakes.

The dredge *Nakusp* was engaged on this portion of the Columbia river in improving the channel at Rock island; cutting through bars at Swan island and at Two Beacon Bar; from October 28, 1905, to March 24, 1906, moving approximately some 22,500 cubic yards of heavy gravel and rock. At the last named point some of the material had to be handled twice to make the channel across the bar of sufficient width for the large steamers. After completing the work at Two Beacon Bar the *Nakusp* was taken to Arrowhead for repairs.

Between Arrow lakes—

Wages	\$2,639 99
Material	741 69
Provisions	939 12
Fuel	323 50
	<hr/>
	\$4,644 30

Kicking Horse river—

Wages	\$1,547 23
Material	929 00
Team hire	492 75
	<hr/>
	\$2,968 98

Total \$7,613 28

VICTORIA HARBOUR.

The work on this service is represented by the operations of the dredge *Mud Lark*, with her tender the tug *Princess*, and two hopper scows, in deepening the entrance to the inner harbour to a uniform depth of 17 feet at low spring tides; deepening in front of the Marine Railway, for the Victoria Machinery Depot Company, in the upper harbour; and in deepening round the wharfs and slip of the Canadian Pacific Railway Company to the same depth as the main channel. The work of drilling, blasting and removing Dredger rock is also included under this service.

The work of dredging at the entrance to the harbour has been frequently delayed, owing to rough weather and its exposed position. In two cases the dredge stern spud was broken, causing considerable delay in renewal.

The *Mud Lark* is still engaged on the entrance channel and will be for some months to come. Dredger rock is about completed.

The expenditure has been as follows:—

Dredge *Mud Lark*—

Wages	\$8,304 86
Provisions	2,468 64
Material	2,625 18
Fuel	2,943 57
Water	31 05
Tug hire	112 90
Contingencies	1 65
	<hr/>
	\$16,487 85

6-7 EDWARD VII., A. 1907

Removal of Dredger rock—

Wages.	\$5,445 88
Material.	2,768 17
Fuel.	276 85
Water.	10 35
	<hr/>
	8,501 25

Total. \$24,989 10

DREDGE 'KING EDWARD.'

The work on this service represents the operations of the dredge *King Edward*—when not working under a special appropriation—and those of the snag boat *Samson*.

The dredge *King Edward* has been engaged during the past fiscal year as follows:—

From July 3 to September 22, 1905, at Chilliwack.

From September 23 to October 23, 1905, deepening in front of wharfs of Brunette and Fraser river saw-mills and repairs.

From October 24, 1905, to January 18, 1906, at Chilliwack.

From January 19, 1906, to January 29, 1906, repairs.

From January 29, 1906, to May 29, 1906, in front of wharfs of Small & Bucklin & Royal city mills.

After some necessary repairs she started on June 5, for Chilliwack, but was recalled and placed on Annieville bar. The work of changing her spuds and lengthening her cutter shaft and suction pipe was completed on June 22 when, in response to the urgent request of the Pilot Board, she was, previous to starting on Annieville bar, sent to the mouth of the river to deepen the channel between Nos. 1 and 2 Red Buoys, where she was still engaged at the end of the fiscal year, but had about completed her work at that point.

The snag boat *Samson* has been engaged in her usual duties of removing snags; maintaining and moving buoys, marking the channel over the sand heads and at the mouth of the river, as the shifting channel may require, for the Department of Marine and Fisheries; surveying and aiding in many ways the work of the dredge *King Edward*. These duties keep her fully employed and her crew constantly busy.

The expenditure has been as follows:—

Dredge *King Edward*:—

Wages.	\$ 12,168 58
Provisions.	2,573 72
Material.	2,244 34
Fuel.	9,048 15
Contingencies.	82 30
	<hr/>
	\$ 26,117 09

Snag Boat *Samson*:—

Wages.	\$ 8,790 49
Provisions.	2,360 25
Material.	1,913 55
Fuel.	1,939 00
Water.	54 07
Contingencies.	42 80
	<hr/>
	15,100 16

\$41,217 25

Generally—Wages. 170 00

Total. \$ 41,387 25

SESSIONAL PAPER No. 19

NEW DREDGING PLANT.

The only items affecting this appropriation in British Columbia for this year are the completion of the new steel tug and tender, and the commencement of the Skeena river snag boat.

The former has been fully described in my annual report for 1904-5. The contract was signed on August 8, 1904, and the work was to be completed six months after that date, or February 8, 1905. Owing to several alterations claimed as necessary, including the enlargement of the boiler and addition of bilge keels or rolling chocks, and allowed, considerable delay was entailed. For this reason, together with the fact that until our new harbour dredge was completed there was no immediate demand for her services, the completion of this boat has only now been reached, or eighteen months after the contract time. Labour, such as was required in here construction, was very difficult and at times impossible to obtain, and as there was no penal clause for delay in the contract, it seemed impossible to expendite matters, although I time and again urged more energetic action on the part of the contractors. Her cost will be approximately \$33,000, but even at this figure she is a cheap boat. There is no question as to the high quality of both material and workmanship. On this head I have the testimony of Lloyd's inspector and our own, and the very full test she has been given in the past and present month in a trip of nearly 900 miles, I consider most satisfactory. A still longer trip, necessary almost immediately, or as soon as I can possibly spare the time, to the Skeena river, Graham island, and Skagway to examine and report on the Atlinto river in Atlin, as the quickest and most economical means of reaching these distant points, will fully establish her worth both in sea-going and steaming qualities. On her return she can be used to advantage in connection with the several salt-water wharfs to be built, in moving pile-drivers, scows, &c., for which, even if she could be spared as tender to the *Mud Lark*, the tug *Princess* is unfit.

The new snag boat for the Skeena river is being built at New Westminster by day labour and, if not delayed by the machinery, will be ready for service this fall. She will be a great acquisition to the service, as the present snag scow is both expensive and unsatisfactory and unfit for the service demanded.

DREDGE REPAIRS.

This service represents the expenditure incident to the somewhat exacting services of our dredges and snag boat, and is classed as 'ordinary' and 'extraordinary,' the former representing work done by our own blacksmiths, carpenters, and crews, and the latter those cases where the services of the machine shop and foundry are called into requisition.

The expenditure has been as follows :—

Snag boat *Sampson*—

Ordinary	\$ 893 13
	<hr/>
	\$ 893 13

Dredge *King Edward*—

Ordinary	\$1,157 24
Extraordinary	4,777 99

Dredge *Mud Lark*—

Ordinary	\$1,197 01
	<hr/>
	5,935 23
	<hr/>
	1,197 01

Total	\$8,025 37
-----------------	------------

DREDGING PLANT UNDER THE CONTROL OF THE DEPARTMENT OF PUBLIC WORKS, 1906.

'St. Lawrence' self-propelling elevator dredge.

Length over all—170·0 feet.
Beam—30·0 feet.
Least working depth—8·5 feet.
Greatest working depth—28·0 feet.
Capacity of hopper—350 cubic yards.
Daily dredging in hard material—350 to 700 cubic yards.
Daily dredging in ordinary earth—750 to 1,000 cubic yards.
Daily dredging in soft earth—1,050 to 1,400 cubic yards.

'Canada' self-propelling elevator dredge.

Length over all—130·0 feet.
Beam—20·0 feet.
Least working depth—7·0 feet.
Greatest working depth—16·0 feet.
Capacity of hopper—90 cubic yards.
Daily dredging in hard bottom—180 to 270 cubic yards.
Daily dredging in ordinary material—180 to 360 cubic yards.
Daily dredging in soft material—360 to 450 cubic yards.

'Prince Edward' spoon dredge.

Length—80 feet.
Width—28 feet.
Greatest working depth—21 feet.
Daily rate of dredging in hard material—300 cubic yards.
Daily rate of dredging in ordinary material—500 cubic yards.
Daily rate of dredging in soft material—700 cubic yards.
Number of accompanying dump scows or barges, 3.
Capacity of bucket or spoon, 1½ cubic yards.

'Geo. McKenzie' spoon or dipper dredge (wooden hull).

Length—90 feet.
Width—28 feet.
Greatest working depth—22 feet.
Daily rate of dredging in hard material—350 cubic yards.
Daily rate of dredging in ordinary bottom—500 cubic yards.
Daily rate of dredging in soft material—600 cubic yards.
Number of dump scows or barges used—3.

'Cape Breton' boom and dipper dredge (steel hull).

Length—91 feet.
Beam—36 feet.
Greatest working depth—34 feet.
Daily rate of dredging in hard material—1,000 cubic yards.
Daily rate of dredging in ordinary bottom—1,500 cubic yards.
Daily rate of dredging in soft bottom—2,000 cubic yards.

SESSIONAL PAPER No. 19

The spoon 'New Dominion' (wooden hull).

Length over all—90 feet.
Width—28 feet.
Greatest working depth—21 feet.
Daily rate of dredging in hard material—300 cubic yards.
Daily rate of dredging in ordinary material—450 cubic yards.
Daily rate of dredging in soft material—600 to 700 cubic yards.

The clam shell dredge 'New Brunswick' (wooden hull).

Length over all—90 feet.
Width—25 feet.
Greatest working depth—17 feet.
Daily rate of dredging in hard material—180 cubic yards.
Daily rate of dredging in ordinary material—300 cubic yards.
Daily rate of dredging in soft material—650 cubic yards.

The 'W. S. Fielding' combined elevator and hydraulic hopper dredge.

Length—250 feet.
Beam—42 feet.
Depth—18 feet.
Working depth—60 feet.
Capacity of hoppers—1,000 cubic yards.
Daily output of buckets—2,600 cubic yards.

Tug 'Cricket.'

Length—36.5 feet.
Beam—7.3 feet.
Draught—3.10 feet
Horse-power—4.

Tug 'Rona.'

Length—85.0 feet.
Beam—19.3 feet.
Draught—8.0 feet.
Horse-power—25.

One pile driver, with boiler and engine mounted on scow.

One stone lifter with large grips (no boiler).

QUEBEC AND ONTARIO.

'Queen' dipper dredge.

Length—65.3 feet.
Beam—25.0 feet.
Greatest working depth—17.0 feet.
Daily rate of dredging in hard material—300 cubic yards.
Daily rate of dredging in ordinary material—400 cubic yards.
Daily rate of dredging in soft material—600 cubic yards.
(Dredge attended by tug *Sensation* and two dump scows) of 30 cubic yards capacity.

6-7 EDWARD VII., A. 1907

'Nipissing' dipper dredge.

Length—70·7 feet.

Beam—25·0 feet.

Greatest working depth—20·0 feet.

Daily rate of dredging in hard material—300 cubic yards.

Daily rate of dredging in soft material—800 cubic yards.

Daily rate of dredging in ordinary material—500 cubic yards.

Capacity of bucket—3 cubic yards.

(Attended by tug *Delisle*, 2 dump scows and 1 coal tender.)*'Ontario' dipper dredge.*

Length—75·0 feet.

Beam—25·0 feet.

Greatest working depth—22·0 feet.

Daily rate of dredging in hard material—300 cubic yards.

Daily rate of dredging in ordinary material—500 cubic yards.

Daily rate of dredging in soft material—800 cubic yards.

(Attended by tug *Sir John* and 2 dump scows.)*'Challenge' dipper dredge.*

Length—70·5 feet.

Beam—25·0 feet.

Greatest working depth—21·10 feet.

Daily rate of dredging in hard material—300 cubic yards.

Daily rate of dredging in ordinary material—500 cubic yards.

Daily rate of dredging in soft material—800 cubic yards.

(Attended by tug *Trudeau* and 2 dump scows.)*'St. Louis,' spoon dredge.*

Length—50·0 feet.

Beam—14·0 feet.

Greatest working depth—12·0 feet.

Daily rate of dredging in hard material—50 cubic yards.

Daily rate of dredging in soft material—300 cubic yards.

(Attended by tug *Daisy* and 2 dump scows). Used only in light work.*'Twin stone lifter' (catamaran).*

Length of each wooden hull—42·0 feet.

Beam of each wooden hull—8·5 feet.

Distance between hulls—7·0 feet.

'Reserve' wooden scow.

Length—59·0 feet.

Beam—17·0 feet.

Capacity—100 tons.

'Sir Richard' dredge.

Length—80·0 feet.

Beam—28·0 feet.

Greatest working depth—22·0 feet.

Daily rate of dredging in hard material—300 cubic yards.

Daily rate of dredging in ordinary material—500 cubic yards.

Daily rate of dredging in soft material—800 cubic yards.

Capacity of bucket—3 cubic yards.

(Dredge attended by tug *St. Paul*.)

SESSIONAL PAPER No. 19

'Richelieu' dredge.

Length—70·0 feet.

Beam—22·0 feet.

Daily rate of dredging in ordinary material—400 cubic yards.
(Attended by tug *Ottawa* and 2 dump scows.)

'Steam stone lifter' centre well.

Length—25·0 feet.

Beam—23·0 feet.

Depth—4·0 feet.

(Attended by 130-foot scow as coal tender.)

'St. Maurice' dredge.

(A small dredge used on the River St. Maurice only.)

Tug *Annette* and stone lifter.

'Lake St. John' dredge.

(A small dredge used in Lake St. John only.)

Tug *Marie-Louise* on Lake St. John.

'International' dipper dredge.

Length—109·6 feet.

Beam—41·0 feet.

Greatest working depth—60·0 feet.

Daily dredging, in hard material—1,000 cubic yards.

Daily dredging, in ordinary material—1,500 cubic yards.

Daily dredging in soft material—2,000 cubic yards.

'Progress' dredge.

Length—90·10 feet.

Beam—39·2 feet.

Greatest working depth—30·0 feet.

Daily rate of dredging in hard material—500 cubic yards.

Daily dredging in ordinary material—1,000 cubic yards

Daily dredging in soft material—1,500 cubic yards.

(Dredge attended by tug *Monitor* and 3 scows.)

'Mattawa' dipper dredge.

Length—75·0 feet.

Beam—25·0 feet.

Greatest working depth—25·0 feet.

Daily rate of dredging in ordinary material—1,000 cubic yards.

(Dredge attended by tug *Catherine* and 2 dump scows.)

'Dredge No. 1' on River St. Louis Feeder.

Length—55·0 feet.

Beam—20·0 feet.

Greatest working depth—12·0 feet.

Daily rate of dredging—300 to 400 yards.

'Dredge No. 2' dipper dredge.

Length—60·0 feet.

Beam—22·0 feet.

Greatest working depth—14·0 feet.

Daily rate of dredging, ordinary material—400 cubic yards.

6-7 EDWARD VII., A. 1907

'Dredge No. 6' dipper dredge.

Length—97·0 feet.

Beam—36·4 feet.

Greatest working depth—35·0 feet.

Daily rate of dredging ordinary material—1,500 cubic yards.

(Tugs *Speedy*, *Montmorency*, *Blanche*. Schooner *Rutherford*.)

MANITOBA.

'Winnipeg' dipper dredge.

Length—71·0 feet.

Beam—25·0 feet.

Greatest working depth—20·0 feet.

Daily rate of dredging in hard material—300 cubic yards.

Daily rate of dredging in ordinary material—500 cubic yards.

Daily rate of dredging in soft material—800 cubic yards.

'Manitoba' dipper Dredge.

Length—60 feet.

Beam—24 feet.

(Dredge attended by tug *'Victoria'* and two dump scows.)*'Priestman,' barge and clam shell dredge.*

A small dredge, old and not much good.

BRITISH COLUMBIA.

'King Edward' propelling hydraulic dredge.

Length—125 feet.

Beam—32 feet.

Greatest working depth—40 feet.

'Mud Lark' dipper dredge.

Length—90 feet.

Beam—30 feet.

Greatest working depth—40 feet.

Daily rate of dredging in hard material—300 to 400 cubic yards.

Daily rate of dredging in ordinary material—500 to 600 cubic yards.

Daily rate of dredging in soft material—800 cubic yards.

(Dredge attended by tug *Princess* and three dump scows).*'Nakusp,' self-propelling, dipper dredge.*

Length—80 feet.

Beam—25 feet.

Boom—50 feet.

Dipper capacity— $\frac{1}{2}$ feet.*Tug boat 'Muskrat II.'*

Length—80 feet.

Beam—20 feet.

'Samson' snag boat.

Length—115 feet.

Beam—30 feet.

'Steel tug and tender.'

Length—85 feet.

Beam—17 feet.

Horse-power—280.

DRY DOCKS.

The Dominion government owns and operates three dry docks, viz.: the Lorne dry dock at Lévis, in the province of Quebec; the Kingston dry dock, at Kingston, in the province of Ontario; and the Esquimalt dry dock, at Esquimalt, near the city of Victoria, in British Columbia.

LÉVIS DRY DOCK.

This dock was kept in an efficient manner during the fiscal year 1905-6. The usual repairs required for the proper maintenance of this property were carried on during the year.

The total expenditure incurred during the year was \$20,566.71.

Total amount of revenue, \$19,715.88.

ESQUIMALT GRAVING DOCK.

The abandonment of Esquimalt as a naval station, during the fiscal year 1904-5, and the withdrawal of all of H.M. ships, with the exception of the small cruiser *Shearwater* and survey ship *Egeria*, together with the completion of the British Columbia Marine Railway Co.'s ways, capable of accommodating vessels up to two thousand tons, have reduced our revenue from between \$14,000 and \$15,000 annually to \$4,626.54 for the fiscal year ending June 30, 1905. From that date up to December 31, 1905, as per my last semi-annual report, the receipts were only \$3,378.80, without any more favourable outlook than the preceding year. But, as will be seen by the attached list of the vessels docked and revenue collected for the present fiscal year of 1905-6, our revenue has reached practically the same figure as before the removal of H.M. ships, or \$14,368.12. It is a matter for congratulation that the commercial requirements of the dock have practically balanced the withdrawal of the navy as the expense of keeping the dock, as it has to be, in a state of thorough repair and efficiency, remains a constant quantity.

The sad death of Captain Devereux, by drowning, on May 25 last, left a vacancy in the position of dockmaster which he had filled for many years. His death was deeply felt, not only by the entire staff, but by the community at large by whom he was much and deservedly liked for his many sterling qualities as an officer and a gentleman in the fullest acceptance of the term.

Expenditure during 1905-6, \$13,022.71.

KINGSTON GRAVING DOCK.

During the fiscal year ended June 30, 1906, the dock has been kept in its usual efficient condition, only repairs necessary to its proper maintenance were carried on.

Total expenditure.	\$5,518 40
Total revenue.	\$9,988 67

SLIDES AND BOOMS.

The Dominion government owns and operates slide and boom works, built to facilitate the passage of square timber, round logs, flatted and dimension timber, &c., on the River Ottawa and tributaries, on the lower forty miles or so of the St. Maurice, and in the Trent and Newcastle district, between Fenelon Falls and Heeley's Falls.

In the subjoined reports, the superintending engineers of the river works, Messrs. G. P. Brophy, F. X. Thos. Berlinguet and S. Clegg, give particulars relative to the construction, improvements and repairs carried out under their supervision on government slides, booms, piers, dams, streams, buildings, &c., during the fiscal year, the expenditure incurred for staff, maintenance, improvements, &c., the quantities of the various descriptions of timber that pass through their works, and other information of general interest and utility to lumbermen and the public at large.

REPORT ON THE OTTAWA RIVER WORKS.

(By G. P. Brophy, Superintending Engineer.)

SIR,—In accordance with instructions received in your circular of July 16 last, I have the honour to submit the following report on the works under my charge, for the fiscal year ended June 30, 1906.

The customary examination of the foundations of the different works was made, and the necessary repairs were commenced and completed in due season.

The following is a description of the work done at the various stations.

REPAIRS AT STATIONS ON OTTAWA RIVER—MAIN STREAM.

Carillon.

The only repairs at this station were of a very trivial nature, and consisted in painting the boat used by the deputy slide master, in the discharge of his duties.

North Chaudiere or Hull.

At the first slide, a special stop-log, with concave contour on upper surface, was made. It is sheathed on top and sides with $\frac{1}{2}$ inch iron bars, and as an extra safeguard, $\frac{3}{4}$ -inch iron saddle clamps were put on to bind the whole together, and prevent the straps from being dislodged.

Some of the top planking and two of the cross stringers of the bulk-head were also renewed.

South Chaudiere or Ottawa.

At the inlet of first slide, two iron pipes, 6 $\frac{1}{2}$ inches, outside diameter, and 22 feet long, were placed on either side of the channel, to hold the guide booms in position. These pipes act as spindles, allowing the boom to work automatically with the rise and fall of water in the river. They are set in concrete at bottom, the rock having been first blasted to give the necessary space, while at the top they rest in forged saddles, and are secured to the steel-work by four staples of $\frac{1}{2}$ inch iron.

Two iron rock bolts, 2 inches diameter, were set in the solid rock, to which were attached the mooring chains of the regulating apron.

The buildings at the general storehouse yard, on Victoria island, were maintained in an efficient state of repair; the boats and canoes were painted and patched; and

SESSIONAL PAPER No. 19

new iron doors were fitted to the concrete vault. A porch, also of concrete, 4 feet x 10 feet inside, with suitable doors, was built to protect the entrance to the vault.

TRIBUTARIES OF OTTAWA RIVER.

Gatineau River.

At the *mouth of Pond creek*, deposits of bark, sand and rubbish interfered with the operations at the sorting and pocket booms, and some 335 cubic yards of these materials had to be removed from the bed of the stream, in order to carry on the work to advantage, at low water pitch. The tops of the booms, at this place, were also planked with 3-inch pine and new fenders and cap-pieces were placed on the booms where the old ones were defective.

At the *main boom*, support piers Nos. 3 and 4 were torn down to low water level and rebuilt. Pier No. 3 is 28½ feet long x 27½ feet wide at base, and 21 feet long by 23½ feet wide at top; pier No. 4 is 31 feet long x 29 feet wide at base, and 23½ feet long by 23 feet wide at top. Both piers are 14 feet high from low water mark. They are sheathed in front and on north side with 3-inch plank, and are supplied with suitable snubbing posts. Timber fenders were placed at the corners to protect the ends of the stringers. The mooring chains were made fast in the body of each pier before the stone ballast was placed. A large quantity of stone was distributed around the foundations of these piers to prevent the sand bottom from being scoured.

New cap-pieces were placed on the main boom, and the clevises, large connecting links and chains were properly adjusted from time to time. During the spring months ice had to be cut from around the booms to relieve them from undue pressure, and extra chains were placed to guard against breakages.

The upper timbers of pier, opposite the station house, were renewed, and fenders were placed on its sides.

The station house, storehouses and fences at the reserve were kept in proper repair; and the boats and scows were overhauled and painted as required.

Madawaska River.

At the *mouth of the Madawaska*, the planking on faces of three of the piers which support the retaining boom was patched. At *Arnprior station*, three new timbers were placed in the apron at side of slide; and at entrance to slide the top planking on the guide booms was renewed. A new splice timber was also set to stiffen the boom. The face of the *lower dam at Flat Rapids* was repaired. At three different places the sheeting had been torn off, and had to be restored. At *Springtown*, the roof of the boat-house was repaired, and in addition the hinges and lock were renewed.

Coulange River.

High Falls Station.—At this station a section of slide at outlet was rebuilt for a distance of thirty-six feet. The stringers, cross-sills, posts, braces and planking were altogether renewed. At seven different places the slide had sagged from four to eight inches, and had to be raised to its proper grade. This was done, and posts and braces were set to keep it in position. At many places sheeting that had become unserviceable had to be renewed; seventy-nine new braces and eight hundred and twenty lineal feet of foot-boards were set; and in the corners of slide bevelled planks were placed to stop leakages and also to strengthen the sides. Two stay chains, with screw and rock bolts attached, were placed, to steady the superstructure and prevent lateral movement. At the entrance piers, iron bars were placed on the sides exposed to wear, and at some of the curves, where difficulty was experienced in keeping the sheeting in good condition, iron bars were also introduced to guard the woodwork.

6-7 EDWARD VII., A. 1907

Black River.

High Falls Station.—The top of the bulkhead at this place was relaid with 2-inch pine plank. Worn and decayed sheeting in sides of slide was replaced, while the iron protection bars were overhauled and tightened where found necessary. Near the entrance to slide a glance forty-five feet in length was built to protect the side wall at curve. Two splice pieces were put in at the gulch to stiffen the stringers, as there is considerable of a curve at this particular place.

Petawawa River.

At the *mouth of this River*, sandbars below the new wharf were excavated, and remnants of the old wharf were removed to give more space to boom out logs after passing through the opening in the new wharf, thus affording additional room for the boom sacks, these now being located nearer the shore and out of the steamboat channel.

At the *first chute slide*, the top timbers of the entrance piers were renewed, six pieces of pine timber having been used. At *Crooked Chute station*, a portion of the bank at north end of the main governing dam having been washed out, the dam was extended a distance of thirty feet to the solid rock, after the site had been cleared of driftwood, logs, &c. This portion was raised somewhat, in order to divert the flow of water from the north end of dam, as formerly a cross-current existed there, and had a tendency to draw the logs away from the entrance of the slide. Cap-pieces were placed on the guide boom, and at the upper end of the boom a new snubbing chain was placed to secure it to its moorings. Additional iron bars were also placed at the corners of the entrance piers to protect the timbers. At *McDonald's station*, the upper portion of the bulkhead pier, on the south side, was rebuilt, and cap-pieces were provided for the guide booms. A number of posts and braces of slide were renewed, damaged sheeting in sides was repaired, and timbers were placed in the corners to give increased rigidity. New stoplogs, roller and supports were made for the bulkhead, and this portion of slide was covered with new material. Some rock obstructions were removed above the entrance to slide.

Dumoine River.

High Falls Station.—A section of the slide here was rebuilt. The portion repaired is 12 feet long, 14 feet wide, and is composed of timber 12 inches in thickness. Immediately below the outlet of slide, a coffer dam 139 feet in length was built to turn off the water, and a channel was blasted for a distance of 105 feet. This cut is 16 feet wide at the head, 22 feet wide at foot, and of a depth ranging from 2 feet at head to 7 feet at foot. At the head of the main chute projecting rocks along the shore for a distance of about 200 feet were blasted. At several places in the lower chutes, protruding rocks were removed to improve the channel.

In addition to the repairs contained in the foregoing description, considerable labour was performed by the deputy slide masters and their staff of men employed during the running season, in making a number of repairs and alterations to the different works. These were of a more or less permanent character, as necessity demanded, and opportunity was had to carry out the work in the intervals occurring between the passing of the several 'drives,' so that no delay to the lumbermen was occasioned in their execution.

Last spring the water in the Ottawa and tributaries was considerably lower than is usual, and this, no doubt, may be attributed, in some measure at least, to the scarcity of snow last winter; but during the summer the water rose steadily, when at the end of June it had attained a height above the average for that time of the year. Since that date it has fallen rapidly and serious difficulty is being experienced on some of the tributaries in getting the late 'drives' out to the main stream.

The following statement, prepared from information furnished by the collector of revenue in your department, shows the number of pieces of the various descriptions of

SESSIONAL PAPER No. 19

timber that passed these works, and the revenue accrued thereon, during the fiscal year ended June 30, last—

	Pieces.
Square timber..	545
Saw-logs..	4,497,180
Boom and dimension timber..	95,807
Cedars..	11,440
Railroad ties..	573,757
Fence posts..	274,146
Total..	5,452,825

Also, 30,918½ cords of pulpwood.

The revenue accrued on the above was \$37,947.69.

6-7 EDWARD VII., A. 1907

STATEMENT showing Expenditure for Repairs and Construction on Ottawa River Works; Bridges at Ottawa and Roadway and Bridges Approaches between Ottawa and Hull; Bridges at Rideau Hall Grounds and Chapeau, and Protection Pier at Graham's Bay, for Fiscal Year ended June 30, 1906.

NAMES OF STATIONS.	Province.	Electoral District.	Expenditure July 1, to Dec. 31, 1905.		Expenditure Jan. 1, to June 30, 1906.		Expenditure July 1, 1905, to June 30, 1906.	
			\$	cts.	\$	cts.	\$	cts.
<i>Repairs: Ottawa Rivers Works—</i>								
Carillon Station.....	Ont.	County of Prescott			3 35		3 35	
North Chaudière Station.....	Que.	District of Wright.			67 95		67 95	
South " ".....	Ont.	City of Ottawa.	314 44		545 27		869 71	
Gatineau River.....	Que.	District of Wright.	1,333 63		1,878 29		3,211 92	
Madawaska ".....	Ont.	South Riding of County of Renfrew.			146 42		146 42	
Coulange ".....	Que.	County of Pontiac	594 38		732 05		1,326 43	
Black ".....	Que.	" " "			163 89		163 89	
Petawawa ".....	Ont.	North Riding Renfrew & Co. of Nipissing	1,621 65		80 59		1,702 24	
Dumoine ".....	Que.	County of Pontiac	1,380 24	5,244 34	29 15	3,646 96	1,409 39	8,891 30
Total for Ottawa River Works.....								8,891 30
<i>Repairs: Bridges at Ottawa and Roadway and Bridge Approaches between Ottawa and Hull—</i>								
Laurier Bridge.....	Ont.	City of Ottawa.			54 79		54 79	
Dufferin ".....	Ont.	" " "			4,401 54		4,401 54	
Chaudière Slide Bridge.....	Ont.	" " "	175 65		117 90		333 55	
Union Bridge.....	Ont. & Que.	City of Ottawa and district of Wright	886 34		100 83		987 17	
Hull Slide Bridge.....	Que.	District of Wright			29 65		29 65	
Roadway and Bridge Approaches between Ottawa and Hull.....	Ont. & Que.	City of Ottawa and District of Wright	3,716 52	4,778 51	543 87	5,328 58	4,280 39	10,107 09
Total for Bridges at Ottawa.....								10,107 09
<i>Princess Louise Vista Bridge—Repairs</i>	Ont.	County of Russell.		101 95				101 95
Chapeau Bridge—Repairs.....	Que.	County of Pontiac.				552 64		552 64
Graham's Bay—Protection Cribwork—Construction.	Ont.	County of Carleton.		4,287 94		2,065 50		6,353 44

JOSEPH KENT, Accountant.

REPORT ON THE ST. MAURICE RIVER WORKS.

(By F. X. Lefebvre, Superintending Engineer.)

THREE RIVERS, November 3, 1906.

EUGÈNE D. LAFLEUR, Esq.,
Chief Engineer,
Department of Public Works of Canada,
Ottawa.

SIR,—I have the honour to submit the following report on the works under my charge, on the St. Maurice river, for the fiscal year ended June 30, 1906.

After the drives had passed, the various structures on the river were examined and a commencement made of the necessary repair and improvements. The work was continued during the winter in order that every thing would be in readiness for the opening of navigation of 1906.

Pointe a Trudel.—On the 40th mile of the St. Maurice river the booms were put in good order and two mooring piers of 25 feet long, 20 feet wide and 9 feet high were constructed.

Pointe a Madeleine.—On the 39th mile, 400 feet of spruce booms 3 feet wide, covered with 3-inch pine, were constructed and a number of chains were supplied. The base of a pier was constructed to replace pier No. 2, which was turned over and too badly injured by the ice to be repaired.

St. Jacques des Piles.—On the 38th mile, from the outlet, the booms were repaired, and a certain number of boom chains were supplied. Two old piers were rebuilt from the low water line and a new anchor pier was constructed. We have also made some repairs to the other piers.

Petites Piles.—On the 35th mile, on the St. Maurice river, 1,400 lineal feet of spruce booms 3 feet wide and covered with 3-inch pine, were constructed, and boom chains for them and a few others were furnished. The large pier on the eastern side, commenced the year before, was finished.

Rapids des Hetres.—The dam of the eastern channel and a pier commenced the year before, were finished.

Pointe a Bernard.—The two piers commenced a couple of years ago were finished, the base of a new pier was constructed, and 800 feet of booms were sheathed and put in good condition.

Shawinigan Slide.—The bottom and side of the Shawinigan slide were repaired by replacing worn out timber and planking the apron with hardwood where necessary.

Shawinigan Lower Bay.—Two old piers were rebuilt from low water line, and one was repaired. The booms were put in good order.

Ile aux Tourtes.—One thousand two hundred feet of British Columbia fir booms 4 feet wide and 16 inches thick were built. The chains and anchors to hold them in place were furnished. The old booms were put in good condition.

Cap aux Corneilles.—One old pier was rebuilt from low water line, and a new pier was constructed. The booms and the other piers were put in good condition.

The drives of the fiscal year 1905-6 were very successful in reaching destination.

6-7 EDWARD VII., A. 1907

REPORT ON THE TRENT AND NEWCASTLE DISTRICT WORKS.

(S. Clegg, Superintending Engineer.)

PETERBOROUGH, August 29, 1906.

EUGÈNE D. LAFLEUR, Esq.,
Chief Engineer,
Department of Public Works.

SIR,—In accordance with your circular letter of July 16 last, I beg to submit the following report for the fiscal year ending June 30 last. These works extend from Chisholms rapids, on the Trent river, to Fenelon Falls, on Cameron lake, a distance of about 150 miles.

HRALEY'S FALLS.

The slide here is in a fair state of repair, the stop-logs put in by the Rathbun Co. in 1905 were too small. The timber was too light to make good logs and they were soon all broken and gone out. Had a new set of logs put in the spring so as to be able to regulate the water and keep it up to navigation level.

HASTINGS.

The works here are in fair repair, the boom was overhauled and put in position for the season and some minor repairs done.

LITTLE LAKE PETERBOROUGH.

There is about one-half mile of double boom and four glance piers. The boom was taken off for the winter, and replaced in the spring for the season's operations and some repairs done. One of the piers was rebuilt from the water line with timber and stone filling, put sheeting on two sides to protect it from the ice-shove in the spring.

KETCHEWANNOE LAKE.

The boom here extends from Lakefield to Young's Point, a distance of about four miles. The boom was considerably damaged by the ice and wind in the spring; quite a number of the chains were broken; the anchors were dragged and some of them lost. Had the boom put back in position; new chains and anchors were required and the whole of the boom overhauled and put in first-class repair.

Three piers in Ketchewannoe lake were rebuilt from the water line, stone filling put in the other piers where required

CLEAR LAKE. YOUNG'S POINT.

There is about one-quarter of a mile of double boom and three glance piers. Had the boom repaired, put in new chains and one large concrete anchor. Rebuilt the three glance piers with concrete tops, they were from 12 to 30 inches under water, raised them up to about 2 feet above high water and put on new iron snubbing posts.

BURLEIGH FALLS.

The works here are in good repair. Had the side dam at the old slide rebuilt and new planking put on; put in one new glance-pier for the stiff boom, built a stone approach from the north end of the stiff boom to the shore.

SESSIONAL PAPER No. 19

LOVESICK LAKE.

There is about a half mile of boom and three piers. The boom was taken off in the fall and put in winter quarters, replaced in the spring; some new chains put in and minor repairs done. Some stone filling put in the piers.

DEER BAY.

The booms here were repaired and put in position for the season

BUCKHORN.

The boom here was placed in position for the season and some minor repairs done.

FENELON FALLS.

The works here have been put in good repair. Put new stop-log posts on the down stream side of slide. Rebuilt the side pier on the down stream side, put new hardwood sheeting on the side pier.; put a new platform over slide with pine timber and planking, new tracks for stop-log winches, rebuilt the approach to slide with cedar timber and pine planking.

REPORT ON THE RIVER SAGUENAY.

In 1904-5 the sum of \$24,988.16 was expended for the construction of piers and booms on the Saguenay river.

The expenditure during the fiscal year ending June 30, 1906, was \$20,253.42 for the construction of booms and \$1,566.82 for maintenance.

The works consist of five piers and 95,000 feet of booms.

The booms are built of British Columbia pine, 12 x 12 and of three pieces each.

6-7 EDWARD VII., A. 1907

BRIDGES AND ROADS.

It may be stated that, in the older provinces of the Dominion, the federal government has confined itself as a rule to take under its exclusive control and make provisions towards the construction and maintenance of important interprovincial road bridges and bridges required across waterways.

In the sparsely settled districts of the Northwest Territories, the government of Canada has undertaken to provide for the erection and maintenance of ordinary road bridges over large streams; bridges that are urgently needed to afford uninterrupted communication through trails and highways of national importance, which neither the municipalities to be more immediately benefited by the structures, nor the territorial authorities most directly concerned, could be expected to erect and maintain at their sole expense.

During the last fiscal year works have been executed on the following bridges:—

BRIDGES AT OTTAWA, AND ROADWAY AND BRIDGE APPROACHES BETWEEN OTTAWA AND HULL.

Laurier Bridge.

An opening, six feet in width, was made in the guard railing on the north side, at the east end of this bridge, to give the Messrs. Dey Brothers access to their boat works and at the west end, the sidewalk on the north side was temporarily raised to grade.

Dufferin Bridge.

The necessary stone blocks, steel girders and plates, cement, &c., for the permanent pavement on this bridge have been purchased and laid down in proximity to the bridge. A false floor was erected on the arch trusses of the eastern span, to prevent the old material from falling on to the tracks beneath when the present floor is being removed.

Chaudière Slide Bridge.

When the water was out of the slide and hydraulic channels an excellent opportunity was had to make some repairs to portions of this bridge, which are under the water line.

The steel posts supporting the superstructure received two coats of metallic paint; the face of the south abutment, both sides of the first pier, and the south side of second pier were pointed with cement mortar, as considerable of the original material in the joints had been washed out by the action of the water, these piers having been built some thirty years ago. The roadway was cleaned often, and the gratings and waterways were kept clear of rubbish, &c.

Hull Slide Bridge.

The sidewalk here was laid with 3-inch hemlock plank, and the roadway was cleaned also when necessity demanded it.

Union Bridge and Approaches thereto.

In order to widen the roadway, and thus provide better accommodation for the heavy vehicular traffic on the Union bridge and both its approaches, the sidewalks on the west side were removed and the space occupied by them was appropriated for roadway purposes. At the southerly approach the sidewalk was 6 feet in width, and extended for a distance of 144 feet, being carried on a rough cribwork. These timbers

SESSIONAL PAPER No. 19

were removed, and a retaining wall of masonry was built, surmounted by a concrete curb 12½ inches in height and 8 inches in thickness. Along this approach a fence of planed boards was erected, the height at southerly end being 7 feet, and at the bridge 9½ feet, the top being level. The fence is composed of 4-inch by 6-inch pine posts and girts, the face being 1-inch pine boards, tongued and grooved, and covered with three coats of paint. The posts of the fence are attached to the masonry by screw bolts, and the top is finished with suitable cap and moulding.

The sidewalk on the bridge was 235 feet long. After it was removed, steel beams 9 inches deep were provided and bolted to the main floor beams to carry the new flooring. The bottom course is of 3-inch white oak, while the top is of 3-inch hemlock. A wooden curb protects the guard railing, and conforms with the one of concrete which adjoins it. The roadway was cleaned frequently, and the planking between the tracks and also that of the west track was renewed with 3-inch hemlock.

At the north end of the bridge the old sidewalk was supported by brackets of angle iron. These brackets were left in their original place, and the spaces between, each 10 to 12 feet in length, were filled with concrete, reinforced by iron bars and plates. The section treated in this way extends for 143 feet, and from this point northward to the Hurdman dam, a distance of 457 feet, the curb follows the outside of the parapet wall which was taken down. From the Union bridge to the Hurdman dam the curb is 11 inches wide and 12½ inches high above the level of the finished roadway. At regular intervals of about 10½ feet, openings of 2½ feet in width were left in the curb to drain the roadway. These openings extend clear through the concrete, and were made with considerable of an incline towards the outside. The same plan was followed with the wooden curb on the bridge, but in addition, scupper plates were supplied to carry the drainage farther out, so as to clear the chords of the bridge.

The guard rail from the bridge northwards consists of four tiers of 1½-inch pipe, supported by iron standards 4 inch by ¾ inch, which were set in concrete, and attached to anchors of angle iron.

An iron guard bar of 4 inch by ¾ inch was placed on the curb throughout its entire length. It is held in place by screw bolts, and protects the curb from abrasion from passing wheels.

The portion converted into roadway, other than that on the bridge, was paved with sandstone blocks.

The sidewalk at north of Hurdman dam was repaired, the roadway was cleaned from time to time, and a portion of the granite pavement to south of Hull slide bridge, where depressions had occurred, was taken up and relaid.

Princess Louise Vista Bridge.

The top planking of the bridge on Princess Louise Vista was renewed. This bridge spans a subway leading from Rideau Hall grounds to Governor's bay on the Ottawa river, and authority was given to undertake the repairs on August 19, 1905. The stringers were levelled to proper grade and the covering consisted of 3-inch hemlock plank.

ONTARIO AND QUEBEC.

Bryson Bridge.

Bryson, with a population of about 600 inhabitants, is situated on the north shore of the Ottawa river, in the county of Pontiac, Que., 55 miles west of Ottawa, the village is four miles distant from Campbell's Bay, the nearest station on the Canadian Pacific railway branch line.

On September 5, 1905, a contract was entered into with Mr. E. Conroy, of Peterborough, for the reconstruction of the wooden approaches and abutments of the two steel span bridges built in 1886.

6-7 EDWARD VII., A. 1907

The work consisted in building two concrete piers and two abutments, and three steel girder spans each 67 feet long, also repairing the wooden pier between the two existing steel spans. Six hundred and forty cubic yards of concrete were deposited in the two piers and abutments, and the weight of the steel structure is approximately 120,000 pounds.

The work was commenced in September, 1905, and on June 30, 1906, the earth approaches only remained to be done.

The amount expended during the fiscal year was \$14,856.22.

Chapeau Bridge.

This structure is situated at Chapeau village, in the county of Pontiac, province of Quebec, and spans the northern channel of the Ottawa river, connecting Allumette island with the mainland.

The timbers of the two piers, about the centre of the bridge, had become so much decayed that two pairs of wooden bents had to be set to carry the floor beams. These bents were framed of 10-inch white pine, and were placed on either side of each pier, resting on the bed of the river, and held together by four screw bolts $\frac{3}{4}$ -inch diameter, which passed through the body of each pier.

Another bent was placed in the centre of the pier at south end of 'draw,' and resting on solid rock, supports both ends of the floor beams.

At the extreme north end of bridge, a section of the top covering was renewed with 2-inch white pine. This is 112 feet long and 8 feet wide. Another section, a short distance to north of 'draw,' was relaid with the same material, the length being 100 feet and the width the same as in the former instance.

The 'draw' which is 76 feet in length, was also covered with 3-inch white pine, the width being 13 $\frac{1}{2}$ feet.

The last 100 feet at the south end of the bridge was thoroughly overhauled; the old covering was removed and four white pine stringers, two being 30 feet and two 27 feet long, were renewed.

A very abrupt grade existed at the southerly end of the 'draw,' and in the new work, this was taken out very considerably. The latter section was laid with 3-inch hemlock plank, 16 feet long.

The repairs executed, places this bridge in a very fair condition, and may be counted upon to serve for the present summer's traffic.

Grand River Bridge.

Grand River bridge, over the Grand river, in the village of York and county of Haldimand.

On April 19, 1905, authority was given to expend \$500 on urgent repairs to bridge; on August 1, 1905, authority was given to expend a sum of \$3,000 for the construction of cutwaters and general repairs, which latter amount was appropriated for this work during the last session of parliament. Work was commenced on July 12, 1905, and consisted of the construction of three concrete cutwaters to piers; the grouting of some heavy cracks in piers; the levelling up and general repairs to approach, decking and railings of bridge and painting.

Total expenditure during fiscal year of 1905-6, \$3,114.85.

Portage du Fort Bridge.

Portage du Fort, with a population of about 600 inhabitants, is situated on the north shore of the Ottawa river, in the county of Pontiac, Que., 60 miles above the city of Ottawa, the village is seven miles distant from Haley, the nearest station on the Canadian Pacific railway main line.

During the months of August and September, 1905, the bridge built in 1901, over the main or south channel of the Ottawa river, was painted two coats at a cost of

SESSIONAL PAPER No. 19

\$589.20, and minor repairs amounting to \$6 were done to the hand railing.

The total amount expended during the fiscal year ending June 30, 1906, was \$3,377.30, of which \$2,782 were for work done in the previous year, on the contract work for the bridge over the north channel, and completed during the year 1904-5.

NORTH-WEST TERRITORIES.

Shellmouth Bridge.

The contract for the substructure of the Shellmouth highway bridge, over the Assiniboine river, was awarded in May to the J. McDiarmid Co., of Winnipeg. Work on this contract had not commenced at the end of the fiscal year, owing to high water in the Assiniboine river.

Expenditure during 1905-6, was \$217.44.

6-7 EDWARD VII., A. 1907

CEMENT.

OTTAWA, August 15, 1906.

E. D. LAFLEUR, Esq.,
Chief Engineer, Public Works Department.

SIR,—I have the honour to enclose herewith the annual report of this branch of the department for the year ending June 30, 1906.

I have the honour to be, sir,
Yours obediently,

GEO. E. PERLEY,
Engineer in charge.

Since June 30, 1905, all samples of cement and other building material submitted to this branch of the department have been thoroughly tested and reported upon, chiefly amongst them being from: Three Rivers wharf, Louise Basin extension breakwater, work at Champlain, Quebec, work at Terrebonne, Quebec, work at Port Colborne, Ontario, Bryson's bridge pier and abutment, the wharf at Masson, Quebec, Gatineau Point retaining wall and Riviere Ouelle wharf.

In the year there were seven hundred and fifty-six (756) samples submitted for test purposes (which number shows an increase of more than 315 per cent over last years).

Out of the 756 samples received, 622 were submitted by engineers of this department, 8 by the Department of Railways and Canals, 1 by the Intercolonial Railway, 101 by cement manufacturers, 16 by architects of this department and 8 by contractors.

And of the total number of samples received:—

- 461 were International Portland cement.
- 75 were White Bros. Portland cement, English.
- 70 were Rampart slag cement.
- 54 were Rathbun's Star Portland cement.
- 33 were Sun Portland cement.
- 10 were John Bull Portland cement, English.
- 10 were unmarked.
- 14 were White Cross Portland cement, Belgium.
- 9 were Samson Portland cement.
- 2 were Edison Portland cement, American.
- 1 was Union Portland cement, American.
- 13 were samples of sand.
- 3 were samples of sandstone.
- 1 was a sample of gravel.

All the above named samples have been thoroughly tested (both physically and chemically) and reported upon, and a record has been kept on file in this office in order to check each year's output of the manufacturers.

During the last year, the engineers of the department have been advised on the best methods to adopt in the mixing of mortar, concrete, &c. Information has also been given to the Militia and Defence Department, the Ottawa City engineer, contractors, and the Transcontinental Railway. Specifications have been prepared for St. Andrew's rapids.

SESSIONAL PAPER No. 19

As mentioned above, the work in this branch having increased over last year by more than 315 per cent and having reached such large proportions that we are now called upon to analyze and test quite a few other building material outside of cement, it was found necessary to have in our laboratory the services of another assistant, which assistant was appointed on May 12.

During the last year our system of gas heating has been changed to electrical heating, that is, we have had installed a complete system of electrical heating devices, which devices are now used for chemical analysis, accelerated tests, pat tests, distilling water, &c., and in order to be independent of the outside electrical power so as to assure accuracy in our tests, a complete motor-generator set, switchboards, and regulating devices have also been installed, so that now, we may venture to say that after the installation of the storage battery plant (which plant it is our intention to put up this fall) we will have the best equipped and most up-to-date laboratory in Canada, and outside of a few exceptions, the best in America, which assertion means, that we are now in a position to carry on tests of cement in the most improved manner and with the best of accuracy, and we hope that, in the course of six months or a year, if we can possibly get more room, we will be in a position to carry on tests, both physical and chemical of any and every kind of building material, including stone, lime, steel, iron, wood, concrete, cement, gravel, sand, reinforced concrete, &c.

PART IV.—APPENDIX 'A'

INTERIM REPORT

ON THE

GEORGIAN BAY SHIP CANAL SURVEY

BY

Arthur St. Laurent, C. E.

6-7 EDWARD VII., A. 1907

GEORGIAN BAY SHIP CANAL.

OFFICE OF THE ENGINEER IN CHARGE,

OTTAWA, July 1, 1906.

EUGENE D. LAFLEUR, Chief Engineer,
Public Works Department,
Ottawa, Ont.

SIR,—I have the honour to transmit herewith the different reports covering work done during the fiscal year 1905-6, in connection with the survey for a projected ship canal from Georgian Bay on Lake Huron, to an ocean port on the St. Lawrence via French river, Lake Nipissing and the Mattawa and Ottawa rivers.

Only a bare statement of the general work done during the year is given in these reports, as it is expected that a final report with estimate and plans will be ready about January or February, 1907.

A brief historical sketch of the previous investigations, in regard to the Ottawa and French rivers as possible routes for transportation is given in the progress report for 1904-5, with information as to the scope of the present investigation, the organization of the survey staff and limits of districts and sections, I will not therefore refer to these matters in the present statement, as these questions will be again treated in full in the final report.

PROGRESS OF WORK.

The survey under progress extends from the Georgian bay through the French, Mattawa and Ottawa rivers, down to Bout de L'Isle on the St. Lawrence river, 12 miles below Montreal, a distance of about 430 miles.

It was commenced in October, 1904, with nine survey parties in the field, supplemented by one hydraulic party, one precise level party and two boring parties.

Subsequently another survey party was organized to work on Lake Nipissing. The survey embraces a strip of territory nearly a mile wide at many places, and at particular points several possible routes have to be surveyed, thus increasing the distances covered to over 600 miles between Georgian Bay and Montreal.

In the report of 1904-5, it was shown that the progress of the work, though not up to expectations, had been very satisfactory, notwithstanding the severe winter experienced and unfavourable conditions generally. Deep and soft snow on the rivers and lakes contributed materially to increase the cost of the survey and to delay the probable time of completion.

During the fall of the present fiscal year (1905-6), it was expected that the conditions would be favourable to rush, after the ice had taken, the soundings of several long stretches of river, and complete these soundings early in the winter. Nature, however, did not co-operate in the arrangements made in this connection.

Under ordinary conditions, ice forms in November, but the fall of 1905 was unusually mild, and the ice was not safe for operations until late in December, and this only lasted for a few days, as a thaw occurred, which further delayed the completion of the soundings.

The different parties, generally under adverse conditions, did their utmost to push the work and show satisfactory progress. The engineers and their staff of men were out in all kinds of weather, and they did not spare themselves to obtain good results, and carry on the work as economically as possible.

I am pleased to report that at the end of this fiscal year, the field work is practically complete, excepting at a few points, which may require further supplementary

SESSIONAL PAPER No. 19

details, where the position of structures may be shifted or changed, when the final location is placed on paper.

The following is a general review of the year's work, leaving out detailed descriptions of the country covered, and the different methods of work, which information will be given fully in the final report.

LAKE NIPISSING AND FRENCH RIVER.

It having been decided to connect the surveys of the present investigation to those of the French river made in 1900, by the late J. W. Fraser, primary triangulation was carried out across Lake Nipissing and through to Georgian bay along the French river, obtaining on the way additional topography to the French river surveys, where changes in the project made in 1901 for the department, were thought advisable, to make provision for the largest boats navigating the Great Lakes.

It was the intention to throw a triangulation net all over Lake Nipissing, which would form the basis of particular determinations of the 5 and 10-foot contours, but with the time at our disposal it was found impossible to do this.

Mr. District Engineer S. J. Chapleau reports that, after a careful reconnaissance, from a material point of view, the only places that would be affected by raising the lake surface would be in the vicinity of East bay, North bay, Beaucage, Sturgeon Falls, Cache bay and Callendar. The surveys were therefore restricted to these localities; the contours in the vicinity of North Bay were closely determined, and the remaining places surveyed for raised water surface contours.

Investigation by inspection, for possible outflow from the west arm of Lake Nipissing into Wellesly river, through its tributaries, due to a raised water surface of the lake, was made by Mr. District Engineer C. R. Coutlee, last fall, and no danger is apprehended in that direction.

The Lake Nipissing party also carried a line of precise levels, connecting the North Bay permanent bench mark with the permanent bench mark at French River village on Georgian bay. This was necessary in order to reduce the elevation and soundings recorded on Mr. Fraser's plans to the accepted datum of the present work.

The work of triangulation, and taking additional sections and topography on the French river, was very much delayed by logs obstructing the river, entirely in many places, and this work which had been commenced in August, 1905, was interrupted during the second week of November, to be resumed in the following spring.

The engineering staff forming this party was engaged during the winter in doing office work, and in May, 1906, again left for the French river to complete the work left unfinished, also to project an entirely new survey of that part of the French river waters known as the Pickerel river, lying between Ox lake and the Horseshoe falls, and from the latter point to the main French at mileage thirty-seven below Frank's bay.

The line being developed, shows, so far, marked superiority for canal purposes, over that part of the main French which lies between Lost Child bend and Ox lake.

The field work of this party will be completed by the middle of July.

Stream measurements were continued by the hydraulic party at both the inflow and outflow of the French river.

SUMMIT LEVEL.

The field work for that part of the territory forming the summit level for the proposed canal was fully completed in August, 1905, with the exception of the investigation connected with the water supply.

The summit level embraces the territory lying between Lake Nipissing and the head of the Mattawa river, including Trout, Turtle and Talon lakes.

Several possible routes were examined between Lake Nipissing and Trout lake, and from Trout to Turtle; also from Talon lake to the Mattawa river. All economical

6-7 EDWARD VII., A. 1907

routes were closely surveyed, to any condition of raised or lowered water surface, in minute detail.

These will be shown on plans, with such other routes which were deemed inefficient to put under close detail.

During the winter of 1906, it was decided, after preliminary investigations, to carry out surveys tending to determine the cost of diverting the Amable du Fond river by flume or open cut, to the head waters of Spark's creek, and thus obtain its discharge into Talon lake, or summit level basin, instead of discharging into the Mattawa, below Talon chute.

This was advisable owing to deductions arrived at by the hydraulic investigations of the present summit outflow which tends to prove an average discharge of 600 cubic feet per second for the whole water-shed of Trout, Talon and Nasbonsing lakes, which was deemed as probably insufficient should the traffic through the canal reach large proportions.

The Amable du Fond average discharge is about 700 cubic feet per second and drains an area larger than that of the above mentioned lakes.

A total length of over thirty miles of line was developed in this connection. The possibility of raising and storing waters in the lakes forming the head of the Amable du Fond was also investigated. The work was completed in March, 1906, further details in regard to the work done in relation to the water supply for the summit level of the canal are given under the head of hydraulic investigation.

MATTAWA RIVER VALLEY

The investigation of the Mattawa river valley, from the foot of Talon lake to the junction with the Ottawa river, was completed in close detail, throughout all routes, between the above mentioned points, for any condition of raised water surface that could reasonably be projected.

Between Talon Lake and Champlain Lake, on the Mattawa, three different routes were investigated, two of which were developed fully and completed in all details for comparison and inclusion in the estimates. One of these routes leaves Talon lake at a place called Sand bay, then runs directly across the divide to a point below the Big Paresseux falls, thence follows the natural valley of the Mattawa.

The other passes through that portion of the Mattawa river, immediately at the foot of Talon chute into Pimisi lake, from which point the line runs over a short divide into Johnson's lake, thence into Smith, Crook and Moore's lakes, continuing in an almost direct line through a natural depression containing two ponds to a blind arm of Champlain lake on the Mattawa.

This route involves the diversion of the main line of the Canadian Pacific Railway for a distance of about seven miles. In case this route should be adopted, a re-location for the railway line was made, which would be superior as to grades and curvature to the original location. All sites for the necessary dams were closely contoured, and the field work for this strip of territory was completed in December, 1905.

OTTAWA RIVER.

FROM MOUTH OF MATTAWA RIVER TO DESJOACHIMS RAPIDS.

All investigations in connection with this part of the Ottawa river, a distance of about fifty-six miles, including contours, soundings, &c., were completed during the second week in January.

The critical points naturally marking the location of controlling structures were developed in minute detail. These points are the localities between the head and foot of Johnson's, Klock, the Deux Rivières and Rocher Capitaine rapids.

The extent of area covered at the last two mentioned localities embraces an alternative route at each to allow of a detailed estimate of either to be projected.

This work suffered some delay in the fall on account of a jam of logs, choking the river completely for a distance of three miles above Rocher Capitaine rapids.

SESSIONAL PAPER No. 19

As the adopted profile for this part of the Ottawa river would affect the Canadian Pacific railway line in some places, necessary information was obtained to include, in the estimate, the cost of raising the present grade of the railway line for about ten miles between Deux Rivières and Klock stations, and about five miles between MacKay and Rockliffe stations.

The engineering staff is now working on the final plans relating to this part of the river.

FROM DESJOACHIMS RAPIDS TO THE CHAUDIÈRE FALLS, AT OTTAWA.

This part of the river comprises nearly 200 miles of river channels to survey.

The Deep river, the Chats and Deschenes lakes, which are included in this stretch, are fine bodies of water. But long stretches are broken up into falls and rapids, dotted with numerous islands, leaving very indefinite and crooked channels.

At Allumette island, the river is divided into two main channels, the south or Pembroke channel, and the north or Calbute channel, which is about ten miles shorter than the south channel but much narrower.

Below, at the head of Calumet island, the river again divides into two branches, known as the northern or Calumet channel, and the south or Rocher Fendu channel.

At the beginning of this fiscal year, about half of the field work in that territory had been done, and the work was continued on the same lines as mentioned in my previous annual report.

The survey of the Rocher Fendu channel had been left aside at first, until an opportunity offered to make a complete reconnaissance through it, in order to decide whether it was necessary to develop it in detail as one of the possible routes. This was done during the winter of 1906 in company with Mr. District Engineer C. R. Coutlee, the result being, that a survey of the route was undertaken. This was developed and cross sectioned, and fixed contours of raised water surface were determined.

Soundings were obtained under many difficulties, on account of swift current and thin ice.

Several supplementary surveys were made across sharp bends, where it was thought that a cut through land would shorten the canal and be more economical than the improvement of the main river.

Several hundred of islands were surveyed and contoured, dam and lock sites investigated, and the bottom tested by borings where required.

At the end of the fiscal year all of the field work in this part of the river between Des Joachims and Ottawa had been completed, with the exception of some details at the Chaudière falls, which had to be left over to be completed in the fall during extreme low water.

All plans connected with this work are well advanced, the line of the canal partially located on paper, and quantities are now being made up.

FROM OTTAWA CITY TO MONTREAL.

At the beginning of the present fiscal year, the survey of this portion of the route had made good progress, more than three-quarters of the ground having been covered.

There remained to develop in detail, the section of the river between Grenville and Carillon, a section of Lake of Two Mountains, and part of the Back river as far as Bout de L'Isle. This work was completed early in the fall of 1905, with the exception of some particular investigations at localities where it may be decided to locate controlling works or other structures; this will be done from time to time as required.

All the St. Lawrence side from Ste. Anne to Montreal has been surveyed and the river sounded, including a traverse and cross sections along the Lachine canal.

All of the Back river from Lake of Two Mountains to the junction with the St. Lawrence ship channel opposite Bout de L'Isle, has been sounded and developed in close contours for any rational raised water surface that may be projected.

6-7 EDWARD VII., A. 1907

Various land routes have been explored carefully at different places, and in some cases, when it seemed that they might compare favourably with the river route, they were developed for estimate purposes.

Below Ottawa, further surveys were made to determine the contours of large tracts of land generally submerged at high water.

The plans for this district in so far as the topography soundings, contours, &c., are concerned, are completed, leaving the line of the canal to be projected, cross sections and quantities to be taken. In some cases, however, the estimating of comparative cost for several locations is well advanced.

HYDRAULIC INVESTIGATIONS.

During the year, the collecting of data regarding the water supply of the summit level in the immediate basin of Trout and Talon lakes was practically completed, and in July, investigations were commenced with respect to the quantity of water available on the Amable du Fond watershed, with a view of using this as a source of further supply if needed.

Complete sets of gaugings were made at all stages of the water, and more than the usual number were required, owing to jams of logs affecting the water levels. Preliminary studies were made as to the possibility of storage in the lakes forming the head of the Amable du Fond, and sites for dams at the outlets were looked into, as well as to the possible height these lakes might be held up.

In addition, data as to rainfall and snowfall was collected.

Various gauges on the Lake Talon watershed have been read continuously, in order to have records for two complete years. Many records of adjacent watersheds were obtained for comparison.

In the office, all the measurements for the Lake Talon watershed have been checked over, and the discharge curve plotted.

On the Ottawa river, gauges were maintained and new ones added. The water this spring was much higher at Deux Rivières than in the previous spring, and additional measurements were made to complete the discharge curve. Check measurements were made also at different points on the Ottawa and French rivers.

The general study of the Ottawa river watershed has been continued. In May, a party was sent with guides to investigate the lakes at the headwaters of the Ottawa and the Gatineau, with a view of collecting information as to the possibility of controlling the flood waters of the river to a certain extent by means of storage reservoirs. Another party will be sent later to investigate some of the large tributaries.

These investigations in regard to storage and control of the Ottawa are only preliminary, and if it be found advisable to go more fully into this question, it will form the subject of a special report, as a full study of this problem will require at least two summer seasons.

PRECISE LEVELLING.

This has been continued during the year, with an interruption of only three months, during which time, note-books were checked in the office, and results obtained deducted from the line run between Vaudreuil and North Bay during the previous year.

In the months of July, August and September, a check line of levels was carried from Toronto to Langford, the intention being to tie in ultimately on the North Bay bench mark, and incidentally to carry on branch lines of precise levels from the main check line to the harbours of Midland and Collingwood on the Georgian bay.

In January, the part between Orillia and Tesseract was covered, and this line was completed as far as Midland during May and June. The party is now working towards North Bay.

In connection with these lines of precise levels, some gaugings were made at Collingwood and Waubaushene.

SESSIONAL PAPER No. 19

Automatic gauges at Toronto and at the foot of the French river have been kept in operation last fall and this spring. From the records of these gauges it is hoped to obtain close connection with the United States gauges at Harbour Beach on Lake Huron and at Oswego and Tebbett's Point on Lake Ontario.

BORINGS.

Two boring parties have been kept at work almost continuously during the year at localities where the nature of the material had to be determined. This work will have to be continued probably up to December, 1906.

OFFICE WORK.

Considerable work has been done on the plans, and the topography, contours and laying of the canal line, on several of the sections, has been completed. Quantities are being taken for comparative estimates, and different projects at critical points of the route are being studied.

Some most important data regarding the principal canals of the world have been gathered, ready for compilation.

Researches have been commenced, leading to the execution of a special map of the Ottawa river showing conceded lands, water powers under option or lease, and those already disposed of, with other information of interest.

This requires careful researches, through federal and both Ontario and Quebec government papers relating to these matters.

The draughting done has been extensive and consisted mostly in plotting and inking in, with the aid of section engineers, of plans, profiles, cross-sections, &c., of the surveys on the different routes studied; also in preparing descriptive lists of bench marks of the precise levelling on the main route and tie lines; and the tracing of a great number of official township, parish and other plans needed in connection with the proposed waterway.

All important documents are placed in a vault at night for safety.

Great care has been taken of the goods, surveying instruments, apparatus, &c., used in the camp equipments, and every precaution also taken in their disposal by sale or storage, after completion of the survey movements in the field. Complete detailed statements showing the goods disposed of by public auction, and the goods still held in stock have been supplied monthly.

CONCLUSION.

As this is only a progress report, no attempt is made to give a detailed description of the route and project, methods of work, approximate estimate of cost, &c.

This will be fully given in detail with such recommendations as may be deemed advisable in the final report to be presented during the course of next winter.

Before concluding, I wish to express my sincere appreciation to every one connected with the staff, for the zeal and devotion with which their arduous duties have been performed. The work has necessarily often been of a dangerous nature, and the men had to endure many hardships. At difficult points, great care has always been exercised by engineers for the safety of their men in working through swift currents and rapids, and it is to their credit that practically no serious accident has occurred during the survey.

I have the honour to be, sir,

Your obedient servant,

A. ST. LAURENT,

Asst. Chief Engineer.

PART IV.—APPENDIX 'B'

GEODETIC LEVELLING

BY

R. STECKEL.

6-7 EDWARD VII., A. 1907

OTTAWA, June 6, 1906.

FRED GÉLINAS, Esq.,
Secretary, Department of Public Works,
Ottawa.

SIR,—I have the honour to transmit herewith for the information of the department a copy of a summary description of the precise levelling operations, carried on in Canada, from their inauguration under my direction in September, 1883, up to January 1, 1906, which I prepared at the request of Mr. Ed. Deville, Surveyor General of Canada.

The said résumé was handed over to Mr. Deville for transmission to Mr. Charles Lallemand, director of the 'Nivellement Général de la France' at Paris, who applied for this information through the director of the Ordnance Survey of Great Britain at Southampton. This gentleman forwarded to Mr. Deville blank forms of tabular statements supplied by Mr. Lallemand to be filled in with the data he desired to obtain under different headings. In the present rather unsettled condition of the geodetic levelling of Canada, I found it however impracticable to fill in satisfactorily the blank columns of the tabular statements forwarded, for which reason the résumé, of which a copy is inclosed, was prepared as a substitute.

I have the honour to be, sir,
Your obedient servant,

R. STECKEL.

N.B.—The illustrations annexed to the original document addressed to Mr. Deville have been omitted in the inclosed copy; they appeared in the official reports of the Minister of Public Works for the fiscal years 1885, 1891 and 1898.

GENERAL INFORMATION RELATIVE TO THE PRECISE LEVELLING OPERATIONS CARRIED ON IN CANADA, FROM THEIR INAUGURATION IN 1883 UP TO 1906.

Precise levelling was inaugurated in Canada in September, 1883, by R. Steckel, civil engineer, in the province of Quebec, on the banks of the Richelieu river, between Lake Champlain and the river St. Lawrence, and has been continued under his direction at various intervals, viz.: as the time and the funds left at his disposal for this service by the Public Works Department would permit.

From 1883 to 1885 inclusively, the levelling instrument used was the 'Stampfer' level (originating from Vienna)—with detached striding level and pivoted telescope movable in a vertical plane at the eye end by means of a micrometer screw—as perfected in 1878 by M. Hilgard, superintendent of the United States Coast and Geodetic Survey, where the instrument has been called 'geodesic level.'

The speaking rod known as the 'Philadelphia Rod' was adapted for use in connection with this 'geodesic level' in place of the elaborate metric rod with target movable by means of an endless chain, which was at the time used regularly in the United States. The figured and graduated face of this modified 'Philadelphia Rod,' 12½ feet long, English measure, was subdivided into twentieths of a foot by target stripes painted in white on two black bands, one on each side of the row of figures indicating the feet and tenths. The rod, when put up at a turning point, was invariably

SESSIONAL PAPER No. 19

placed on a cast iron triangular foot plate; the brass shoe at the foot terminated by a segmental ball support being housed in a corresponding spherical cavity turned in the foot plate. A small circular level mounted on a projecting shelf forming part of the brass shoe served to keep the rod steadily in a vertical position (see Plate I appended hereto).

The Canadian precise or geodetic levelling operations were suspended in 1895 and again taken up in 1901; but this time instead of the 'geodesic level' and the modified 'Philadelphia Rod,' an extra large self-reducing Sanguet tacheometer of special construction ordered from Mr. Sanguet, the inventor, was used in connection with a newly devised double scale rod. Moreover, the method of carrying on the geodetic levelling originally followed was also modified, the whole with a view of securing a more rapid and more economical execution of the work; both as regards the necessary field operations and the office computations, without diminishing, or rather by increasing at the same time, the degree of precision originally aimed at and which is indicated, in general, for great distances: by a mean quadratic accidental error in the difference of elevation of two points distant one kilometer from each other, always less than 3 m.m. (0.0125 foot per mile)—and for short distances: by a difference d between two levellings of the distance k expressed by a fraction of a kilometer, always less than the difference determined by the formula: $d=5 \text{ m.m. } \sqrt{K}$, or by the formula: $d=0.0208 \text{ ft. } \sqrt{M}$ for a distance M given in English miles.

The Sanguet tacheometer in use since 1900 has a telescope 40 centimeters long which magnifies about 50 diameters, and carries a double-faced level with a scale of double millimeters engraved on the bubble tube. Two double-faced levels are supplied with each instrument, on one of them each one of the two millimeter divisions corresponds to about $\frac{1}{50,000}$ of the radius of curvature of the glass tube, and in the other

to very nearly $\frac{1}{65,000}$ of this radius. (See Pl. I 'B' appended hereto).

On the new speaking rod made use of since 1900, the two scales of twentieths of a foot indicated by white stripes 0.008 ft. wide painted on black bands, on both sides of the figured face of the altered 'Philadelphia Rod,' are replaced by a scale of fortieths of a foot indicated on one side of the figured rod face, by a row of white target stripes 0.02 ft. wide painted, alternately a long one and a short one, on a black band 0.05 wide and connected at the centre by white hyphens, and a scale of half-hundredths of a foot, defined by black lines drawn on these white stripes and the narrow white bands or hyphens uniting them in the centre. When at a distance varying from 150 to 300 feet, according to the atmospheric conditions, the black lines which define the spaces half a hundredth of a foot in width, cease to be distinctly visible with the telescope, the white stripes permit of estimating the heights intercepted on the rod with the requisite degree of precision. (See Pl. II. 'B' and III. 'B' annexed).

It is the intention to use as soon as possible, metrical double scale rods, similar to the new rods now in use, but formed of battens all of one length (about 4 meters) glued together.

The geodetic or precise levelling operations were invariably carried on by running two distinct continuous lines of geodesic levels simultaneously in one and the same direction, that is to say: two different series of fore and back sights were taken from one and the same series of level stations proceeding in the same direction over a stretch, or section of line varying from twenty-five to thirty miles in length; but adjacent sections of approximately the said length were levelled, proceeding successively in opposite directions. That is to say: if the operations were performed on one section (No. 1) going from east to west, those of the adjoining section (No. 2) were commenced at its western end and proceeded with, going eastward.

From 1883 to 1902, in imitation of the course followed by the United States Coast and Geodetic Survey prior to 1899, the system of precise levelling adopted in Canada aimed at the determination of the absolute elevation or altitude of each turning point

6-7 EDWARD VII., A. 1907

on the net of lines levelled, with the greatest degree of precision presumed possible, without taking into serious consideration the errors that may result from changes in the temperature and other atmospheric conditions, the seismic movements, &c., during the time needed to attain the said end.

To this effect :

(a) The rod stations for the turning points were established, in general, by measuring approximately by pacing equal distances on each side of the level station ; but without ever taking the trouble to equalize such adjoining back and foresight stretches within a fixed limit of error, no matter what difference was found to obtain between the said contiguous distances as determined by the stadimetric measurements made subsequently from the level station.

(b) When reading the height of the apparent intersection of either of the extreme stadia wires with the graduated face of the rod above its zero, the interval between this wire and the centre of the next lowest white stripe or target line, was estimated by the eye in hundredths and thousandths of a foot; but in order to establish the exact height of the centre or horizon wire above the zero, the corresponding interval was invariably determined by lowering or raising the pivoted telescope with the micrometer screw under its eye end, so as to cause the centre wire to bisect the said next lowest white target line or stripe and computing the space thus traversed on the rod face.

At each regular back or foresight, four micrometer readings were taken with the bubble brought to the centre of the tube, and four corresponding readings with the centre wire pointed on the target line immediately below the intersection of the horizontal line of collimation with the rod scale, viz., in each case two readings with the micrometer head kept above the telescope, one of which being made with the striding level placed on top of the bronze collars with its adjusting screw on the eye end side, and the other with the said level turned round end for end, and two readings with the telescope turned 180° about its longitudinal axis so as to cause the micrometer head to pass underneath the telescope, of which, one reading made with the striding level resting on the bronze collars with its adjusting screw at the object end and the other with this detached level turned end for end.

The space traversed by the centre or levelling wire on the vertical graduated face of the rod, when passing from the apparent intersection of the horizontal plane at the height of the optical axis of the telescope with the said rod face, to the centre of the next lower target line as determined by the two series of micrometric measurements above described—was accurately computed at the office with the aid of the distance level to rod, deduced from the stadimetric readings; all the corrections required to eliminate the errors due to the inequality of the bronze collars of the telescope, the curvature of the earth and the atmospheric refraction, being properly applied. The sum of this micrometric interval and the height of the white target line read directly on the rod with the telescope, was taken to be the absolute elevation of the horizontal line of collimation above the zero at the foot of the rod.

A short time after resumption of the geodetic levelling in 1901, with the self-reducing Sanguet tachometer and the new double scale rod, practically all the parties engaged or interested in such work in America, became definitely satisfied that the uncontrollable errors resulting from changes in the temperature and refraction of the atmosphere, the seismic movements, &c., during the time needed to establish by means of the long series of observations and micrometric measurements just described, the absolute elevation of each turning point, with all the precision which the instruments then in use permitted to attain—may easily exceed in importance the errors likely to be committed when the subdivision of the smallest scale units visible through the telescope effected by the apparent intersections of the horizontal wires of its diaphragm with the graduated rod face, is estimated by the eye. It was therefore decided to discard the system followed up to that date of determining the precise absolute elevations of the turning points, and to adopt for future use the method of levelling, known as the 'differential method,' which consists essentially in establishing from each level station, in the shortest possible time, the actual difference of level between equi-distant fore

SESSIONAL PAPER No. 19

and back sight plates, by estimating with the eye the precise heights above zero of the apparent intersections of the centre wire with the rod scale.

In view of the great facility of measuring with the aid of the self-reducing Sanguet tachcometer and a good speaking rod, all ordinary distances at which rods are usually put up, with even greater accuracy than required for geodetic levelling purposes—when establishing corresponding turning points, their paced distances from the tachcometer were invariably equalized within one or two feet by means of preliminary tachcometric distance measurements made before the levelling operations proper were proceeded with.

Moreover, the differences of level between two corresponding turning points A, B, in the two lines levelled simultaneously (or the double rodged line), which are afforded at any level station by the backsights b_A and b_B , were always carefully compared with the corresponding differences afforded by the foresights f_A and f_B , taken on the same points A, B, from the preceding station. In case the perfect agreement of these differences, which is indicated by the equation $d = b_A \sim b_B \sim (f_A \sim f_B) = 0$, could not (by repeating the operations, &c.) be approximately realized without overstepping the limit defined by $d < 0.000300 (\sqrt{B} + \sqrt{F})$, where B and F denote the mean lengths of the back and foresights taken from two consecutive tachcometric stations, and b_A , b_B and f_A , f_B the two back and foresight readings in question taken from the said stations—which happened very rarely—the difference $b_A \sim b_B$ was verified with the tachcometer put up specially at a very short distance from the rod, and the necessary steps were taken there and then to eliminate the error considered to be inadmissible.

The number of indispensable entries to be made in the field book at each tachcometer station was thus reduced from 48 to 16, for two lines levelled simultaneously in the same direction, and the necessary office computations were reduced to their simplest expression.

Field operations have been carried on each year, generally between the months of May and November. Permanent metallic bench marks have been established at least every four miles, and temporary bench marks at least, as far as possible, every mile.

Total length of lines levelled from September, 1883, to January, 1903, inclusive of the cross sections and other short lines and spurs of secondary importance run in connection with the regular sections of the main level net; 636.9 statute miles, of 5,280 English feet. The ordinary or temporary bench marks are numbered consecutively in ordinary figures with paint; they consist generally of brass-headed nails, with a cavity turned on top corresponding to a small segment of the spherical base of the ball support which terminates the brass shoe at the foot of the rod; these nails are driven into roots of trees, fence posts, stakes, &c.

The metallic or permanent bench marks are numbered consecutively in roman figures; they consist, as a rule, of copper plugs or bolts driven firmly into walls, rocks, &c., with a horizontal chisel mark cut in the centre of the end of each bolt or plug, and

C.

are marked thus B. \odot M.; their number (X) being added below the plug, and all the

X

letters cut into stone, rock, &c.

Total number of metallic or other permanent bench marks established during the period of 19 years and 4 months, 1883 to 1903: CCLXI.

Total number of ordinary or temporary bench marks of all kinds established during the same period: 472.

Total length of lines of primary importance, for which the mean quadratic accidental errors afforded by the comparison of two distinct operations performed simultaneously in the same direction were computed, 612.9986 miles, 530.4582 miles of which were levelled with the geodesic or perfected 'Stämpfer level' and 82.5404 miles with the self-reducing Sanguet tachcometer.

6-7 EDWARD VII., A. 1907

1°. For the 530·4582 miles of the main level net which were run with the geodesic pivot level with independent striding level (see pl xxvii., xxviii., appended hereto):

- (a) Total mean quadratic accidental error: 0·176268 foot.
- (b) Mean quadratic accidental error per mile: 0·007653 foot.

2°. For the 82·5404 miles of the main level net run with the self-reducing Sanguet tachometer with double faced level:

- (a) Total mean quadratic accidental error: 0·05421 foot.
- (b) Mean quadratic accidental error per mile: 0·005970 foot.
- (c) Mean of 979 accidental discrepancies which obtained between the differences of two fore sight readings taken from one station, on two corresponding turning points in the two lines levelled simultaneously—and the differences of the two back sight readings taken from the next following station on the same points: 0·002573 foot.

3°. For the total length of 612·9986 miles of the main level net:

- (a) Total mean quadratic accidental error: 0·183756 foot.
- (b) Mean quadratic accidental error per mile: 0·007422 foot.

Between January 1 and October 7, 1904, an additional stretch of about 220 miles of main line was levelled; the last metallic or permanent bench mark established is numbered CCCXCII and the last temporary bench mark made is number 535.

The probable accidental errors have not so far been computed for the whole seven additional sections completed on the ground, which cover a total distance of about 186½ miles; but on the first of these sections which has a length of 27·8177 miles, the mean quadratic accidental error per mile has been found to be only 0·00348 foot, and the total mean quadratic accidental error: 0·01834 foot.

In October, 1903, the regular geodetic levelling operations then in progress were suspended, and the staff employed, as a rule on this work, was called on to do similar work for use in connection with the extensive surveys undertaken by the Public Works Department, with a view of definitely locating and ascertaining the probable cost of the projected ship canal from the Georgian bay, in Lake Huron, through the valleys of the French and Ottawa rivers, down to Montreal.

This special precise levelling has been performed with the Sanguet tachometer and the new double scale rod, without changing in any particular the methods finally adopted for carrying on the regular tachometric precise levelling of Canada, but for various reasons the mean quadratic accidental errors have not so far been calculated, and as it was of paramount importance to push ahead the field work as rapidly as possible, not much attention could be paid to the severity of the climate and other controllable sources of error, by which the results might in a certain measure be affected. It is, therefore, not impossible that at some future date it may be deemed necessary or desirable, to verify parts of the field work performed on some of the sections thus somewhat hastily levelled, in order that the limit within which accidental errors have hitherto been tolerated in the Canadian main level net, may nowhere be overstepped.

The total distance gone over with the tachometer up to January 1, of 1906, in connection with the said extensive surveys is 610·44 miles, and the last permanent bench mark established bears the number DCXCIII, and the last temporary bench mark the number 687; 301 permanent and 152 temporary bench marks having been made.

Total distance levelled January, 1903, to January, 1906, 830·44 miles; 436 permanent and 220 temporary repairs having been established.

The tide gauging stations established by the Department of Marine and Fisheries on the south shore of the St. Lawrence estuary at the Lévis graving dock, port of Quebec, and at Father Point, have been connected with the net work of geodetic levelling as well as the automatic gauges installed by the Public Works Department on the north shore of Lake Ontario at Kingston and Toronto, and a large number of temporary gauges, put up on the Rivers Richelieu and St. Lawrence, &c.

All the altitudes determined with precision in Canada up to 1903, have been referred provisionally to a horizontal plane coinciding with a mean sea level approximately determined at Quebec in 1881-2. It would appear that this plane lies 5·53 feet below

SESSIONAL PAPER No. 19

the actual mean sea level of the Atlantic in New York harbour, according to the connection (made in 1888), of bench mark A, established at the bottom of a cast-iron pipe or well, placed on Canadian soil, about 7 feet in the ground, on a concrete foundation, near the boundary line between Canada and the United States, slightly to the northward of the village of Rouse's Point, at the foot of Lake Champlain, state of New York—with the bench mark cut in the shape of a cross on a stone of the 'Chapman' block of stores in the said village by the United States Coast and Geodetic Survey, if we adopt the altitude of the latter bench mark as corrected in 1900, viz. by diminishing its original altitude by 1.08 foot.

The altitudes determined since 1903 have been referred to the mean level of the sea determined at New York, pending the connection of the Canadian geodetic level net with an automatic tide gauge installed at a convenient point on the Atlantic coast, and the accurate determination of the mean level of the sea in Canadian waters.

It is intended to resume work, shortly, on the continuous line of levels commenced with a view of connecting with the least possible delay the self-registering tide gauge installed some ten years ago by the Department of Marine and Fisheries in Halifax harbour, Nova Scotia, with the Canadian system of geodetic levelling—and subsequently, after having reduced all the altitudes determined in Canada in feet, to meters—referring the same to the mean level of the Atlantic deduced from the tide curves registered at Halifax, where the water level is not affected by fluctuations in the discharge of river water, as is the case on the St. Lawrence.

PART V

REPORT ON GOVERNMENT TELEGRAPH LINES

FOR THE

FISCAL YEAR ENDED JUNE 30, 1906

DEPARTMENT OF PUBLIC WORKS.

OFFICE OF THE GENERAL SUPERINTENDENT,

OTTAWA, ONT., December 11, 1906.

F. Gelinas, Esq.

Secretary, Department of Public Works.

SIR,—I beg to submit herewith my report on the Government Telegraph Service for the twelve months ended June 30, 1906.

This report, as usual, is prefaced by a list to the present date of the land lines and cables in operation; with data of lengths, year of construction, number of offices at present established, and an estimate of the traffic handled in each instance.

The usual tabular statements giving list of offices, operating staff, &c., in the several districts are appended to the report; likewise the tariff sheets, showing the rates charged for messages on the several lines.

I have the honour to be, sir,

Your obedient servant,

D. H. KEELEY,

General Superintendent.

THE GOVERNMENT TELEGRAPH SERVICE.

DOMINION OF CANADA

HEAD OFFICE : DEPARTMENT OF PUBLIC WORKS, OTTAWA.

(December 1, 1906.)

EXECUTIVE.

The Hon. Chas. S. Hyman, Minister of Public Works.
A. Gobeil, Esq., I.S.O., Deputy Minister of Public Works.

STAFF AT HEADQUARTERS.

D. H. Keeley, general superintendent.
M. W. Crean, technical assistant.
J. P. Demartigny, accountant, telegraph branch.
Miss A. Hardcastle, stenographer.

GENERAL INSPECTORS.

A. B. McDonald, Meat Cove, Cape Breton, lines in Nova Scotia and New Brunswick.
J. S. Macdonald, Qu'Appelle, lines in Northwest and south British Columbia.
J. E. Gobeil, lines in Yukon division.

SUPERINTENDENCIES.

Edwin Pope, Quebec, dist. supt., North Shore and G.N.W. traffic.
J. O. Taché, dist. supt., Chicoutimi district and north shore to Bersimis.
E. H. Tetu, Penticost, dist. supt., North Shore, East Bersimis.
P. Pouliot, dist. supt., Quarantine line, &c., to Grosse Isle.
A. Malouin, dist. supt., West Point, Anticosti Island.
A. Le Bourdais, Grindstone, dist. supt., Magdalen islands.
D. C. Dawson, St. John, N.B., dist. supt., Cape Breton system.
Mrs. C. C. Seeley, Grand Manan, N.B., dist. supt., Bay of Fundy system.
J. McR. Selkirk, Leamington, Ont., dist. supt., Pelee Island system.
Robt. C. Macdonald, Qu'Appelle dist. supt., Northwest Territories.
Wm. Henderson, Victoria, dist. supt., British Columbia, south.
C. S. Stevens, Kamloops, B.C., supt., Penticton line.
J. Y. Rochester, Vancouver, B.C., acting supt., Yukon system.
J. T. Phalen, Ashcroft, B.C., dist. supt., Ashcroft-Atlin.
H. Gilchen, Whitehorse, Y.T., acting dist. supt., Atlin-Boundary.

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE.

Location of Lines.	Points connected.	Year.	Length of Lines.			Number of Offices.	Yearly Average of Messages Sent.	
			Land Lines.	Cables.	Total.			
			Miles.	Kt's.				
Newfoundland.	Port au Basque—Cape Ray	1883	14		14	2		
Nova Scotia.	North Sydney—Meat Cove (with loops)	1880-02	167½		168½	17	5,000	
"	Across Bras d'Or channel	1880						
"	St. Ann's Harbour	1887						
"	Ingonish Harbour	1887			20	3	50	
"	Big Bras d'Or—Kempt Head	1904	20					
"	Meat Cove—St. Paul's Island	1890		20	23	1	2,500	
"	On St. Paul's Island	1890	3		109	9		
"	Mabou—Meat Cove	1887-00	109		17½	Leased.	1,500	
"	Barrington—Cape Sable	1883	16					
"	Across Bear Point Channel	1883		1½				
"	Lt. House Channel	1883			73½	15	1,500	
"	Mabou—Port Hawkesbury	1903	41½					
"	Port Hawkesbury—St. Peters	1903	32		128½	15	1,500	
"	St. Peters—Main-à-Dieu	1904	81½					
"	Main-à-Dieu—Scatarie	1902		1½	36	.....	.....
"	On Scatarie Island	1904	7½					
"	Galarous—North Sydney	1904	35½		36	.....	.....
"	Little Bras d'Or—Kempt Head	1905	36		37½	.....	.....
"	North Sydney—Eekasoni	1905	37½					
New Brunswick.	Chatham—Escuminac	1885	42		42	6	600	
"	Bay of Fundy System:							
"	Eastport—Campobello	1880		1½	44½	10	2,500	
"	On mainland Eastport	1880						
"	On Campobello Island	1880	7½					
"	Campobello—Grand Manan	1880		7½	20½	.....	.....
"	On Grand Manan Island	1880	20½					
"	Grand Manan—Cheney's Island	1890			44½	10	2,500	
"	On Cheney's Island	1890						
"	Cheney's Island—Whitehead Island	1890			14½	.....	.....
"	Partridge Island—Fort Dufferin	1900						
Quebec.	Bay St. Paul—Chicoutimi	1881-04	98		98	6	2,000	
"	St. Alexis—St. Catherine's Bay	1904	78		78	5		
"	Murray Bay—St. Agnes	1904	14½		14½	2		
"	Bay St. Paul—Petite River	1904	13		13	1	10	
"	Chicoutimi—St. Charles	1903	37		61	10		
"	St. Anne—Lac Claire	1903	15					
"	St. Anne—St. Fulgence	1903	9		57½	4	15,000	
"	St. Fulgence—Sacré Cœur	1905	57½					
"	Murray B'y—St. Catharines Bay (2nd wire)	1904	44½		44½	.....	
"	St. Alexis—Chicoutimi (2nd wire)	1905	14½		14½	.....	
"	North Shore Line:							
"	Murray Bay—Chateau Bay	1881-01	1,028½		1090	66	15,000	
"	Across Saguenay River	1883		1½				
"	Bersimis to Manicouagan	1883		12				
"	Manicouagan to Godbout	1883		26	22½	80	.....
"	Chateau Bay—Belle Isle	1901						
"	Bersimis—Godbout (alternative line)	1904-05	80		80	.....	.....
"	Quarantine System:							
"	Quebec—L'Ange Gardien	1885	13		52½	8	2,300	
"	L'Ange Gardien—Orleans Island	1885						
"	On Orleans Island	1885	29½					
"	Orleans Island—Isle Réaux	1889		2	2½	1	.....
"	On Isle Réaux	1889	2½					
"	Isle Réaux—Grosse Isle	1889		2	5½	1	.....
"	On Grosse Isle (all told)	1885-94	3½					
"	St. Jean—St. Famille (loop)	1904	5½		5½	1	.....
Carried forward.			2,222½	101½	2,324½	166	31,450	

GOVERNMENT TELEGRAPH SERVICE—*Concluded.*

Location of Lines.	Points connected.	Year.	Length of Lines.			Number of Offices.	Yearly Average of Messages Sent.
			Land Lines.	Cables.	*Total.		
			Miles.	Kt's.			
	Brought forward		2222½	101½	2324½	166	31,450
	<i>Anticosti System:</i>						
Quebec.....	Gaspé—L'Anse à Fougères.....	1881	28		316½	9	1,500
".....	L'Anse à Fougères—Anticosti.....	1881		44½			
".....	On Anticosti Island.....	1881-90	223½				
".....	Anticosti—Long Point, Mingan.....	1890		21			
	<i>Magdalen Island System:</i>						
".....	Meat Cove, C. B.—Magdalen Islands.....	1880		55	261	13	2,100
".....	On Magdalen Islands.....	1881-02	83½	½			
".....	Grosse Isle—Bryon Island.....	1902		11			
".....	Bryon Island—Anticosti.....	1902		93			
".....	On Bryon Island (Loop).....	1903	1				
".....	House Harbour—Pointe Basse (Loop).....	1902	4				
".....	Pointe Basse—South Beach (Loop).....	1905	3				
	<i>Peleé Island System:</i>						
Ontario.....	Leamington—Point Peleé.....	1889	12		42½	9	800
".....	Leamington Dock—Peleé Island.....	1901		17			
".....	On Peleé Island.....	1889-00	13½				
North-west.....	Qu'Appelle—Edmonton.....	1883	625		625	16	9,500
".....	Mooselaw—Wood Mountain.....	1885	90½		90½	2	300
".....	Wood Mountain—Willow Bunch.....	1904	38		38	5	2,000
".....	Edmonton—Indian Ag. & Stoney Plain.....	1904	24		24		
".....	Edmonton—Athabaska Ldg.....	1904	98		98		
".....	Duck Lake—Batoche.....	1902	9		12½	3	200
".....	Duck Lake—Indian Agency.....	1902	3½				
".....	Edmonton—St. Albert.....	1887	9		36	3	2,500
".....	St. Albert—Qui Barre and Alexandria.....	1902	27				
".....	Lloydminster (loop) near Pitt.....	1904	22		22	1	400
".....	Victoria—Andrew and Whitford.....	1904-05	11½		11½	2	
British Columbia.....	Ashcroft—Queenselle (local wire).....	1878-87	215		215		
".....	Victoria—Cape Beale.....	1891	118		118	6	800
".....	Nanaimo—Comox.....	1893	81		81	8	
".....	Parksville—Alberni.....	1895	29½		86½	2	8,000
".....	Alberni—Cape Beale.....	1899	57				
".....	Alberni—Clayoquot.....	1902	96½		96½	5	550
".....	Kamloops—Lower Nicola.....	1899	67		67	9	1,400
".....	Lower Nicola—Penticton.....	1905	168		168	7	6,000
".....	Vernon—Kilowna.....	1905	35		35	2	1,000
".....	Kilowna—Penticton.....	1906	45	1½	46½		
".....	Golden—Windermere.....	1901-02	92		92	5	1,500
".....	Duncan Sta.—Salt Spring Isl. & Extens.....	1902-04	24	¾	24¾	4	
Yukon.....	Ashcroft—Dawson and Boundary.....	1899-01	1845		2,252½	66	45,000
".....	Hazleton—Port Simpson and Aberdeen.....	1901-02	202½				
".....	Tagish—Cariboo Crossing.....	1901	18				
".....	150 mile Sta.—Queenselle Forks.....	1902	64				
".....	Ashcroft—Lillooet.....	1896	62				
".....	Queenselle—Barkerville.....	1887	61				
	Total, end of 1906.....		6829½	345½	7,175	343	115,000

* For convenience in totalling, the knots of cable are regarded as statute miles.

REPORT ON THE GOVERNMENT TELEGRAPH SERVICE 1905-6.

EXPLANATORY NOTES.

The tabular statement prefacing this report shows the total mileage, &c., of the telegraph lines operated by the government. Lines that have been subsidized or constructed and transferred by the government for operation by private companies are not included in this list.

The matter in the following pages comprises a statement of specific actions taken in the course of the year; and, as a new departure, the particulars are given in separate reports, hereto subjoined, that have been obtained, where practicable, from the district superintendents, and will be found indicated under the several division headings. In any case where no particular reference is made to a line found in the above-mentioned list, the understanding intended to be conveyed is that that line has been satisfactorily operated throughout the year, without any change of conditions since last made mention of in the annual reports.

NEWFOUNDLAND.

The line from Port au Basque to Cape Ray continued to be operated as heretofore, under an arrangement with the Anglo-American Telegraph Company.

MARITIME PROVINCES.

Cape Breton.—Construction of new lines.—The projected extensions mentioned in last year's report were carried to completion in the summer of 1906, and arrangements for the opening of offices were in hand at the close of the fiscal year. The one from Little Bras d'Or to Kempt Head, on the south side of Boularderie, comprises 81 miles of pole line and 86 miles of wire, including loops for office connections; and the one to Eskasoni comprises 81½ miles of pole line and 87½ miles of wire, including loops for office connections and a stretch of 6 miles along the previously existing line between Balls Creek and North Sydney.

Maintenance and operation of the several lines in Cape Breton will be found dealt with in the report (1) from the Supt., Mr. D. C. Dawson, hereto annexed.

Scatari Island Cable.—Interrupted since November 3, 1904, as mentioned in last year's report. Recently restored in course of repair ship's operations. See cable ship *Tyrian*.

St. Pauls Island Cable.—Interrupted since November 14, 1904, as mentioned in last year's report. Recently restored in course of repair ship's operations. See cable ship *Tyrian*.

Magdalen Islands.—See report (2) from the Dist. Supt., Mr. A. LeBourdais, hereto annexed.

Special winter tariff.—With a view to rendering the existing facilities for communication with the mainland as useful as possible during the season of suspension of the mail service, a special rate of ¼ cent per word was established the winter before last for messages between the Magdalen Islands and Meat Cove, where the mainland telegraphs are joined at the regular tariff, or the mail is reached for the interchange of letters. It is proposed to continue the same arrangement yearly in the interests of this isolated community.

Meat Cove-Magdalen Islands Cable.—This important connection became interrupted on June 1, 1906, the ss. *Tyrian* was shortly afterwards in readiness for the season's operations, and her attention was, as early as practicable, directed to this section. The repair was made and communication restored on July 26.

6-7 EDWARD VII., A. 1907

Bryon Island Cables.—As mentioned in last year's report, the stretch between Bryon Island and Anticosti became interrupted on December 11, 1904, and the one between Bryon Island and the Magdalen Islands on February 11, 1905. In both cases so far as could be locally determined, the trouble was in deep water, necessitating the services of the ss. *Tyrian*, but it was not found possible to put the ship at work there before the season was too far advanced to make an attempt at repair practicable. Meanwhile the expediency of discontinuing the use of the long Bryon-Anticosti section was decided upon in the department; and instead of repairing that cable a considerable portion of it was picked up from the Bryon Island end, for use elsewhere, and the remainder, extending to Heath Point, Anticosti, left undisturbed until there may be occasion for its recovery. The other section, Bryon-Grosse Isle, Magdalens, was repaired by the *Tyrian* on July 28, 1906.

Anticosti Island.—See report (3) from Dist. Supt. A. Malouin, hereto annexed.

Anticosti Cables.—As was mentioned in the last year's report, the cable between Mechastic Bay and Long Point of Mingan had been out of order since November 14, 1904, and the Southwest Point-Gaspé cable gave out on November 20, 1905, thus completely shutting the island off from outside communication. It chanced, however, that the Marconi wireless telegraph staff had not yet left Anticosti for the winter, as was contemplated, and upon signals being exchanged between them and the station at Cape Ray, Newfoundland, the circumstance was reported to the department, and an arrangement made for the continuous operation of these two stations at a total cost to the department of \$1,000, pending the restoration of the regular means of communication. The Gaspé cable was repaired by the *Tyrian* on August 8, 1906, and the Long Point stretch on the 16th of the same month. A troublesome leak was, however, found in this latter cable, but further effort to put it in good order was deferred because of the services of the ship being more urgently needed elsewhere.

BAY OF FUNDY.

Maintenance and operation. See report (4) from the Dist. Supt., Mrs. C. C. Seely, hereto annexed.

Local Telephone Company.—For the accommodation of the local telephone company operating on Grand Manan, a permit has been given by the department for the stringing of their wire, subject to the usual conditions, on the poles of the telegraph line throughout the length of the island.

Eastport-Campobello Cable.—As was noted in last year's report, this cable ceased working on July 5, 1905, and was repaired by the ss. *Tyrian* on September 5 following. It has since continued in good order.

NORTH SHORE AND CHICOUTIMI SYSTEM.

Under the arrangements put in operation, as stated in last year's report, the several lines comprising this system have been rendering good service. Some further extensions have been made in the Chicoutimi district which will be found fully dealt with in the accompanying report (5) from the Dist. Supt., Mr. J. C. Tache, resident engineer at Chicoutimi.

Joint tariff with G. N. W. Tel. Co.—Since September 1, 1905, the charge for messages between Quebec and all points on the government lines west of, but not including Bersimis, has been 25 cents, with 2 cents each for additional words over ten, evenly divided between the company and the government. The earlier rates applied to Bersimis and all offices further down on the north shore continue unchanged, viz.: the local government line rate plus 15 and 1 for business exchanged with Quebec; or plus the full regular rate of the G. N. W. Tel. Co. beyond Quebec.

SESSIONAL PAPER No. 19

District Superintendency, east of Bersimis.—It was found expedient to change the location of the district superintendent's office from Pentecost to Long Point of Mingan. To this end a house suitable for office and residence was purchased from Mr. G. Viel, and as early as possible thereafter Mr. E. H. Tetu, district superintendent, removed to that place (September 17, 1905), and Mr. P. J. Molloy, of Magpie, took the local agency at Pentecost.

Belle Isle Cable.—This cable, owing to the establishment of regular wireless telegraph service by the Marconi Company for the Department of Marine and Fisheries, has not yet been taken in hand for repair. The arrangement for the maintenance of communication with Point Amour through the winter of 1905-6, mentioned in last year's report, was duly carried out, and in the early summer the land line telegraph office at Chateau Bay was reopened for the season.

Grosse Isle Quarantine System.—In pursuance of what was decided upon in regard to the establishment of an alternative means of communication between Grosse Isle and Quebec on occasions of interruption of the submarine telegraph cables, as mentioned in last year's report, arrangements were made with the Marconi Wireless Telegraph Company for the erection of stations at these points. The one at Grosse Isle is adjacent to the regular telegraph office and is equipped with a generator for the signalling current, and the one at Quebec is located on the citadel hill and obtains its supply of energy from the circuits of the power company. It has been found that the provision thus made readily answers the purpose had in view. A detailed report (5a) from Mr. A. Pouliot, district superintendent, is hereto appended.

ONTARIO.

Pelée Island Line.—The Pelée Island cable which had been for some time out of order, but was repaired on October 13, 1905, as stated in the last annual report, continued in operation up to the close of the fiscal year, and the service has been satisfactory. A separate report (6) covering the particulars of operations, &c., from the district superintendent, Mr. J. McR. Selkirk, will be found hereto annexed.

NORTHWEST LINES.—BRITISH COLUMBIA AND YUKON.

The separate reports (7-10) presented by the respective district superintendents, and included in the appendices hereto, will be found to convey more fully than the forms of synopsis heretofore observed, an account of what has been done in those several divisions of the service in the course of the past year. The whole affords a very satisfactory showing.

TELEGRAPH SERVICE GENERALLY.

Cable-ship 'Tyrian.'—The repair ship was got into service early in the season, with Captain T. O'Leary in command, and the staff officers and crew unchanged from last year as detailed in the last annual report. The ship had a busy and successful season, as is shown by the statement submitted elsewhere. Mr. A. B. McDonald, now general inspector of the lines in the maritime provinces, with headquarters at Bay St. Lawrence, C.B.; ably acted in the capacity of electrician in connection with the ship's operations throughout the year.

Headquarters Staff.—It is with profound regret that mention has to be made in this report of the decease (on November 13, 1906), of our greatly esteemed associate, Mr. J. A. Parr, who for several years occupied the position of technical assistant in this the head office at Ottawa. His kindly interest in all of those with whom his duties brought him in touch, has endeared his memory to the whole of us.

6-7 EDWARD VII., A. 1907

Telegraph Systems of the Dominion.—As a matter of general interest, pursuant to the statement submitted last year, the latest figures to hand showing the extent of telegraph lines in operation in the Dominion are given hereunder:—

Canada.	LENGTH OF LINES IN MILES.			LENGTHS OF CONDUCTORS IN MILES.			Number of offices.
	Aerial.	Under-ground.	Total.	Aerial.	Under-ground.	Total.	
Great North Western Telegraph Co.	11,775	.....	11,775	44,573	.....	44,573	1,360
Canadian Pacific Telegraph.....	10,292	2	10,294	50,952	57	51,009	1,150
Western Union Telegraph Co....	2,610	28	2,638	9,806	44	9,849	219
Government Telegraph Service..	6,829	.....	6,829	6,829	.....	6,829	343

REVENUE AND EXPENDITURE.

The revenue and expenditure for each of the government lines in the several districts hereinbefore mentioned are given in the following table: —

1905-06	Expenditure.	Revenue.	Remarks.
	\$ cts.	\$ cts.	
Lower St. Lawrence and Maritime Provinces:—			
Anticosti lines.....	7,471 95	1,118 02	
Bay of Fundy.....	1,571 55	1,096 53	
Gaspé Local.....		34 68	
Escuminac.....	466 09	235 26	
Magdalen Islands.....	3,770 50	1,160 61	
Father Point Agency.....	500 00		
Cape Breton lines.....	11,480 36	2,618 77	
North Shore (E.B.).....	14,460 73	3,937 42	
" (W.B.).....	9,387 35	1,373 70	
Quarantine system.....	1,242 26	534 02	
Isle aux Coudres.....	220 85		
Cable ship <i>Tyrian</i> :—			
Maintenance and renewal of plant.....	78,445 23		
Subsidies, stationery, line and office material and contingencies.....	6,999 66		
Gulf general.....	6,959 65		
Total for lower St. Lawrence, &c.....			
Ontario:—			
Peleé Island line.....	2,829 09	76 40	
North-west Territories lines.....	29,154 72	8,308 39	
British Columbia:			
Alberni-Cape Beale.....	3,962 86	13 42	
Alberni-Clayoquot.....	2,670 86	715 79	
Golden-Windermere.....	2,258 10	791 56	
Kamloops-Nicola.....	5,162 64	2,587 90	
Nicola-Penticton.....			
Nanaimo-Comox.....	2,729 08	2,323 47	
Vancouver-Salt-Spring.....	407 43	125 69	
Vernon-Kilowna.....	1,924 55	1,145 81	
Victoria-Cape Beale.....	4,032 80	649 13	
B. C. service generally.....	526 95		
Yukon:—			
Ashcroft-Dawson.....	208,508 56	77,453 81	
Telegraph service generally.....	2,026 92		
Total.....	409,173 60	106,300 38	

Signal Service messages, Meteorological Service messages and reports, and Fisheries bulletins are handled free of tolls.

DEPARTMENTAL TELEPHONE SERVICE.

At the end of June, 1906, the telephone connections with the central offices of the Bell Telephone Company at Ottawa, listed as chargeable to the special appropriation,

SESSIONAL PAPER No. 19

numbered 292, the annual charge for which amounts to \$12,151.25. The connections are distributed amongst the several departments as hereunder:—

Department.	Offices.	Residences.	Annual charge.
			\$ cts.
Agriculture	7	4	435 00
Auditor General	6	1	255 00
Census Branch	1	1	85 00
Customs	5	2	290 00
Dominion Police	6	3	363 00
Exchequer Court	1	2	105 00
Finance	6	2	323 00
Governor General (including private system)	7	2	379 75
House of Commons	15	3	742 50
Indian Affairs	4	1	190 00
Inland Revenue	4	5	408 00
Interior (including line to Observatory)	31	5	1,455 00
Geological Survey	2	2	145 00
Justice	6	12	703 00
Labour Department	1	1	85 00
Mounted Police	3	1	145 00
Marine and Fisheries	10	6	613 00
Militia and Defence	12	11	887 00
Parliamentary Library	1	2	120 00
Privy Council	4	5	370 00
Post Office Department	7	4	420 00
Public Works (including Ottawa River Works)	36	16	2,163 00
Printing and Stationery	4	2	270 00
Railways and Canals	6	6	513 00
Secretary of State	3	3	233 00
Senate	5	1	215 00
Trade and Commerce	3	3	220 00
	186	106	12,151 25

APPENDED TABLES.

The usual tabular statements of the lines and offices, staff, &c., of the telegraph service, following hereupon, will be found to contain whatever additions or changes have been made up to June 30, 1906.

D. H. KEELEY,
General Superintendent.

OTTAWA, December 1, 1906.

DOMINION TELEGRAPH SERVICE.

NEWFOUNDLAND TELEGRAPH SERVICE.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Memo.
		Miles.	\$ cts.	
1	Port au Basque	0	50 00 on commission.	N.B.—The commission is 25 per cent upon all business to and from the office; said commission guaranteed not to be less than at the rate of \$50 per annum.
2	Cape Ray Lighthouse	14	50 00 "	
	Totals	14	100 00	

N.B.—The above short line is constructed in connection with the Signal Service, and connects at Port au Basque with the land line system of the Anglo-American Telegraph Company.

6-7 EDWARD VII., A. 1907

GOUVERNMENT TELEGRAPH SERVICE—Continued.
ANTICOSTI TELEGRAPH SYSTEM.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
4	Fox Bay	0	Geo. Cabot	300 00	May 13, 1900	Increased from \$200 since December, 1902.
2	Heath Point	23	A. Tremblay	50 00 or commission.	Aug. 1, 1900	For local agency.
3	South Point Lighthouse	32½	E. Leprise	200 00 per annum.	Nov. 1, 1902	For cable repeating station.
4	Shallop Creek	17½	B. Bradley	50 00 or commission.	July 1, 1881	
5	Salt Lake	52½	A. Allard, agt. repairer	240 per annum	" "	
6	South-west Pt. Lighthouse.	15	A. Z. Lemieux	360 00	June 1, 1903	Plus \$1 per day when on duty as general repairer.
	Jupiter River	7		420 00	" "	Increase from \$380 since May, 1903.
	Otter River	17½		50 00 or commission.		
	Beacoe River	22		50 00		
	Cape Eagle (Fillis Bay)	10	Jas. Duguey	50 00	June 20, 1906	
7	West Point Lighthouse	9	A. Malouin, dist. supt.	344 00 per annum	Aug. 1, 1900	
8	English Bay	3	" " operator	480 00	" "	Temporary.
	Mechastic Bay (cable land- ing)	14½	F. Cabot	300 00	July 1, 1882	
	Totals	222½		2,944 00		

South-west Point connects with l'Anse à Fougère, Gaspé, by cable 44½ knots; and from Mechastic Bay connection is made with Long Point of Mingan by cable 21 knots.

0	L'Anse à Fougère		Thos. Dupuis	17 00		Special allowance for the cable terminus. A testing station only.*
1	Gaspé Basin	28	J. J. Annett	540 00	Oct. 16, 1881	Transfer office. Connection with G. N. W. telegraph system. The salary was \$420 per year previous to December, 1, 1903.
		28		557 00		

* This payment was made to Mr. N. Bernier prior to October, 1903.

SESSIONAL PAPER No. 19

MAGDALEN ISLANDS SYSTEM.

MAGDALEN ISLANDS SECTION.

		0	Miss J. Shea.....	50 00 or commission..	Oct. 1, 1882.....	The commission is 25 per cent on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of \$60 per annum.
1	Amherst.....					
2	Amherst Lighthouse.....	9	Wm. Cornier.....	50 00	June 11, 1881.....	Plus \$1 per day when absent on duty.
3	Etang du Nord village.....	15	{ I.G. Binet, gen. repairer.....	400 00	Dec. 1, 1900.....	Two-wire loop line.
4	Etang du Nord Lighthouse.....	1	{ Mrs. A. Binet.....	50 00	" 1, 1881.....	
5	(Grindstone Island.....	5	{ N. Arseneault.....	Commission 25 p.c.	Sept. 20, 1891.....	
			{ W. Leslie.....		May 17, 1890.....	
6	Grindstone West.....		{ A. LeBourdais, dia. supt.....	720 00	Aug. 15, 1893.....	Plus \$1 per day when absent on duty. The salary was \$600 per annum prior to May 1, 1904.
			{ Mrs. LeBourdais, oper.....	50 00	Sept. 15, 1893.....	Temporary assistant.
			{ J. J. LeBourdais.....	37 00 per month.....	May 25, 1904.....	
7	House Harbour (4 knot cable)*.....	3	Camille Delaney.....	50 00 or commission	June 1, 1903.....	
8	Wolfe Island.....	28½	{ N. Clark.....	360 00 or commission	June 1, 1889.....	For repeating station. Prior to Dec. 1, '02 the allowance was \$200 and commission for local agency.
9	Groese Isle.....	11	{ J. Quinn.....	50 00	Dec. 1, 1902.....	
10	Grand Entry.....	11	{ Mrs. F. Atkins.....	50 00	Feb. 18, 1882.....	
11	*Point Basse—2 Wire loop from House Harbour.....	4	H. Arseneau.....	50 00	Aug. 1, 1902.....	
12	South Beach—2 Wire loop.....	3	E. Chevrier.....	50 00	July 1, 1905.....	
13	Bryon Island.....	1	W. Dingwell.....	160 00	Jan. 1, 1903.....	Two-wire loop line from terminal hut for Groese Isle and Anticosti cables.
		91½		2,130 00		

Groese Isle connects at Old Harry with Meat Cove, C.B., by cable 55 knots; and connects with Bryon Island by cable 11 knots; thence to Heath Point Anticosti 98 knots.

6-7 EDWARD VII., A. 1907

GOVERNMENT TELEGRAPH SERVICE—Continued.
CAPE BRETON SECTION.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Mile.		\$ cts.		
1	Meat Cove (cable station).		A. B. McDonald, Circuit Manager	720 00	Nov. 7, 1890.	The commission is 25 p.c. on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of \$60 per annum.
2	Aspy Bay	10½	L. Y. Nichols	50 00 or commission	July 1, 1894.	The loop line formerly running to White Point has been withdrawn.
3	Dingwell (loop line)	33	Murdoch McLeod	50 00	Aug. 31, 1898.	
4	Cape North (Inland)	23	John McDonald	50 00	May 13, 1904.	
5	Nel's Harbour (half-way house loop line)	3	M. McLeod	50 00	April 1, 1887.	
6	Ingonish North Bay	12	Mrs. S. S. Burke	50 00	June 1, 1884.	Former Agent J. M. Burke deceased.
7	South Ingonish	9	Geo. Brewer	50 00	May 7, 1899.	
8	Ingonish Ferry	10½	Anna McLeod	50 00	Oct. 1, 1903.	
9	French River ½ knot cable.	2	John McDonald	50 00	April 1, 1899.	
10	Indian Brook	21	Annie McDonald	50 00	Aug. 1, 1901.	
11	Murray (loop line)	5	R. B. Matheson	25 p.c. R. & Cks.	Jan. 23, 1902.	25 per cent commission only.
12	Englishtown ½ knot cable.	14	W. Bingham	120 00 and commiss.	July 19, 1882.	Switching point for Baddeck line.
13	South Gut, St. Ann's (on loop)	10	Rachael Morrison.	50 00 or "	Sept. 1, 1904.	Closed December 31, 1899.
14	Baddeck (on loop).	13	L. M. Anderson	100 00 and "	June 17, 1904.	Salary—\$120 per year previous to this appointment. Former Agent Mr. A. Anderson. This loop to Baddeck starts from and returns to Englishtown
15	Englishtown (back on loop)	18	J. S. Burchell	50 00 or commission	July 7, 1904.	
16	Kelley's Cove, N. Campbellton	6	Mrs. E. Livingston	100 00	Jan. 1, 1889.	Increased from \$50 to \$100 since Nov. 1, 1904. The commission is 50 p.c. on local business and 25 p.c. on through messages; and covers supervision of line and office accommodation at North Sydney.
17	Big Bras d'Or ½ knot cable. North Sydney	24 12½	W. U. Tel. Co.	Commis'n only		Increased from \$80 since June 1, 1903. Payment includes horseshire.
<i>Repairs Sections.</i>						
	Meat Cove—Sugar Loaf		M. McAskill	80 00	April 1, 1898.	
	Sugar Loaf—Ingonish		Charles Smith	160 00	" 1, 1898.	
	Ingonish—Englishtown		R. A. McDonald	100 00	" 1, 1898.	
	Englishtown—Baddeck		D. McAulay	60 00	Nov. 1, 1904.	
	" North Sydney		Dan Campbell	100 00	July 14, 1903.	
	Murray—Indian Brook		John Smith	25 00	June 17, 1902.	
	Ingonish		S. S. Burke, gen. repr.	420 00	April 1, 1904.	
	North Sydney—Boulevardrie and Eskasoni.		Joseph Leque, gen. repr.	420 00	Mch. 14, 1905.	
Totals				2,945 00		

SESSIONAL PAPER No. 19

Branch Line.		Mrs. E. Livingston		July 1, 1899		The commission is 25 p.c. of the (govt. line tolls in each instance and is guaranteed to amount to not less than \$50 per annum.
0	Big Bras d'Or	4	Mrs. J. B. McKenzie	Oct. 6, 1904.	" 6, 1904.	
1	Exulstorie Centre	12	Miss Johanna Campbell	" 6, 1904.	" 6, 1904.	
2	Rose Ferry	4	Mrs. Murdock McKenzie	" 6, 1904.	" 6, 1904.	
3	Upper Kempt Head					
Totals		20				
Meat Cove station connects with the Madgalen Islands system by a cable to Old Harry Head, 55 knots, and with St. Paul's Island by a cable of 20 knots. The latter is operated with telephones.						
1	St. Paul's Island	3	S. C. Campbell	Oct. 1, 1890.	Land wire across the Island, Atlantic Cove to Trinity Cove.	
MABOU-CHETICAMP AND MEAT COVE, C.B., TELEGRAPH SYSTEM						
1	Mabou	0	Mrs. M. McDonald	April 1, 1887.	The commission is 25 p.c. of the Government line tolls, and is guaranteed to amount to not less than \$50 per annum. Where 50 p.c. commission is paid there is no guarantee as to amount.	
2	Strathlorne	9	Rosela McLean	July 7, 1905		
3	Inverness Town (Broad Cove)	11	Agnes A. Gillis	Mar. 1, 1892.		
4	South-west Margaree	12	J. D. McFarlane	Feb. 1, 1898.		
5	Margaree Harbour	5	H. K. McLean	Oct. 20, 1896.		
6	North-east Margaree (loop line wire)	10	Mrs. J. D. Ross	Feb. 1, 1898.		
7	Grand Etang	8	G. Doucet	Sept. 13, 1902.		
8	Cheticamp	8	Chas. J. Au Coin	Aug. 3, 1905.		
9	Pleasant Bay	27	M. J. McIntosh	Oct. 15, 1903.		
10	Cape St. Lawrence	15	C. Jamieson	Jan. 1, 1904.		
	Meat Cove.	4	See Meat Cove Line.	" 1, 1887.		
			D. C. Dawson, D. Supt., }			
Repairs Sections.						
	Mabou—Strathlorne.		L. G. McDougall	Nov. 3, 1902.		
	Strathlorne—S. W. Margaree		J. D. McFarlane	June 4, 1902.		
	S. W. Margaree—Margaree Harbour		Alex. McFarlane, sr.	" 4, 1902.		
	Margaree Harbour—Grand Etang		H. K. McLean	" 1, 1903.		
	Cheticamp		Joseph L. Chiasson	" 1, 1905.		
	Cheticamp—Barren		J. G. Chiasson	July 1, 1905.		
	Barren—Pleasant Bay		J. A. McLean	" 20, 1903.		
	Pleasant Bay—Polits Cove.		K. Fraser	" 20, 1903.		
	Polits Cove—Halfway		E. Fraser	" 20, 1903.		
	Shanty		R. Fraser	" 20, 1903.		
	Halfway Shanty—Meat Cove		V. A. McLellan	Mar. 1, 1905.		
	General Inman					Salary covers horse-hire, &c.
Totals		109				
						1,365 00

GOVERNMENT TELEGRAPH SERVICE—Continued.
NORTH SYDNEY—MEAT COVE AND PORT HAWKESBURY SECTION.

Number.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salary per annum.	Date of Appointment	Memo.
		Miles.		\$ cts.		
1	Mabou.....	0	D. J. McDonald.....	50 00*	July 1, 1903	(See Mabou.—Meat Cove section.)
2	Port Hood.....	10	Mrs. McDonald.....	50 00	" 1, 1904	
3	Judique.....	10	J. D. Cameron.....	50 00	" 1, 1903	
4	Craiglish.....	8	Miss M. McFarlane.....	50 00	" 1, 1903	
5	Port Hastings.....	10	Miss E. McDonald.....	120 00	" 1, 1903	
6	Port Hawkesbury.....	33	Angus Boyd.....	50 00	" 1, 1903	
7	River Bourgeois.....	26	D. Morrison.....	100 00	Nov. 1, 1903	Main battery at St. Peters.
8	St. Peter.....	6	Miss Mary D. Finlayson.....	50 00	June 22, 1905	
9	Lower Lardoise (½ mile loop).....	74	Miss Jessie Finlayson.....	50 00	" 1, 1903	
10	Grand River.....	7	Miss May Hardy.....	50 00	" 1, 1903	
11	Fourchu.....	26	Miss C. Grant.....	360 00	Jan. 16, 1904	Repeating office. Increase subject to approval.
12	Gabarous (3 mile loop).....	16	Wesley Townsend.....	50 00	Feb. 1, 1904	
13	Louisbourg.....	14	Miss Maud Dickson.....	50 00	June 1, 1904	\$50 additional to Main & Dieu agency for care of main battery.
14	Main & Dieu.....	13				
15	To cable landing.....	1	{ F. E. Pope.....	50 00	Aug. 15, 1904	
	Cable across channel.....	14	{ J. T. Martel.....	50 00	" 1, 1904	
	Scatarie Island (Western Light).....	74				
	" (Eastern Light).....					
	Repeater Sections.					
	Mabou and Judique.....		J. H. Campbell.....			
	Judique and Port Hawkesbury.....		J. N. McIsaac.....	420 00	Aug. 1, 1904	(See Mabou.—Meat Cove section.)
	Port Hawkesbury Gabarous.....		J. E. Bisset Gent. Repr.			
	Gabarous.....					
	Junction (wire only 3 miles).....					
	Marion Bridge.....					
	Perry Lewis.....					
	Leitch's (reel).....					
	North Sydney.....					This line was opened for business Dec. 11, 1903.
	Totals.....	292½		930 00		

* Or commission. The commission is 25 per cent of the Government line tolls, guaranteed at rate of \$50 per annum. North Sydney transfer office, connection with W. U. Telegraph system.

SESSIONAL PAPER No. 19

NOVA SCOTIA TELEGRAPH SYSTEM.
CAPE SABLE SECTION.

1	Barrington	0				
2	Newelton (including 14 knots cable)	11				
3	Cape Sable Island light-house (including 4 mile cable)	63				
	Totals	174				

This line has been leased to the Barrington Telephone Company from August 12, 1897. The lease is terminable at any time.

EAST COAST SECTION.

N. B.—In connection with the Signal Service a land line, 208 miles in length, was erected in 1831, between Canscon and Halifax, for a bonus of \$16,000, and is maintained and operated by the Western Union Telegraph Company, without further cost to the Government.

BAY OF FUNDY, N.B., TELEGRAPH SYSTEM.

GRAND MANAN SECTION.

Long Eddy Cable Hut to.							
1	Flagg's Cove.....	3	Mrs. C. C. Seely (D.Su.)	540 00	Nov. 18, 1880.....	*The commission is 25 p.c. on all business to and from the office in each instance; and commission guaranteed not to be less than at the rate of \$50 per annum. When 50 p.c. commission is paid there is no guarantee as to amount.	
	"		Miss V. A. McFarlane	50 00 or commission.	Oct. 1, 1903.....		
	"		A. Gilmour, repairer	60 00	Dec. 1, 1894.....		
2	Castalia.....	24	G. E. Dalzell	Commission 25 p.c.*	June 1, 1898.....		
3	Woodward's Cove.....	34	W. A. Fraser	" 50 p.c.	Feb. 28, 1893.....	\$25 per annum is included for repeating Whitehead branch. Southern head office is now operated by telephone from Seal Cove.	
4	Grand Harbour.....	2	J. L. Newton	75 00 or commission.	April 1, 1887.....		
5	Seal Cove.....	44	J. A. Ingersoll	" 50 00	Sept. 22, 1899.....		
6	Southern Head Lighthouse	54	O. McLaughlin	Commission 25 p.c.	April 22, 1897.....		
Branch Line.							
7	Grand Harbour.....	0					
8	Cheney's Island (1 knot cable)	42	S. E. Russell	" 25 p.c.	Feb. 1, 1891.....		
	Whitehead Island (1 knot cable)	14	Mrs. W. Cassaboom...	50 00 or commission.	" 1, 1903.....		
	Cable, Long Eddy to Liberty Cove.....	74					
Liberty Cove Cable Hut to.							
9	Welchpool	74	{ Wellington Parker, Librarian.	2 00 per day		Employed occasionally.	
	Cable across channel.....	12	{ G. F. Mitchell	210 00 and commission.	May 1, 1906.....		
10	Eastport, Maine, U.S.A.	4	J. Cushing.....	200 00	Dec. 26, 1881.....		
	Totals.....	444		1,035 00			

6-7 EDWARD VII., A. 1907

GOVERNMENT TELEGRAPH SERVICE—Continued.
CHATHAM-ESCOMINAC, N. B., TELEGRAPH SYSTEM.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
1	Chatham.	0	Great North-western Telegraph Co.	185 00		
2	Black Brook.	5½	M. McDougall.	50 00 or commission.	July 1, 1904.	This amount is paid for supervision of the line and office accommodation at Chatham. The commission is 25 p. c. of the Government line tariff receipts in each instance, and is guaranteed to amount to not less than \$50 per annum. \$12 per annum allowed for care of main battery at Point Escuminac.
3	Bate du Vin.	15	Mrs. M. Williston.	50 00	Mar. 1, 1885.	
4	Lower Hardwicke.	6	Mrs. M. Brimmer.	50 00	Aug. 1, 1891.	
5	Escuminac.	3¾	D. Lewis.	50 00	Sept. 1, 1885.	
6	Point Escuminac lighthouse	12	K. R. McLennan.	50 00	Nov. 1, 1893.	
	Totals.	42		435 00		

GROSSE ISLE QUARANTINE TELEGRAPH SYSTEM.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
1	Quebec.	0	Great North-western Telegraph Co.	185 00		This amount is paid for supervision of the line, and govern rent of pole line from Quebec to L'Ange Gardien, for which \$85 per annum is charged. This commission is 25 p. c. of the Government line tariff in each instance, and guaranteed to amount to not less than \$50 per annum.
2	L'Ange (gardien).	13				
3	St. Pierre.	4½	C. Turcotte.	50 00 or commission.	Mar. 1, 1885.	
4	St. Pierre.	4½	M. Plante.	50 00	April 7, 1896.	
5	St. Jean.	7	M. Gobeil.	120 00 and 25 per cent commission.	Sept. 15, 1898.	For local agency. Chief operator and repairer.
6	St. Jean.	6½	P. Pouliot.	120 00 and 25 per cent commission.	July 1, 1898.	
7	St. François.	3½	O. Lemelin.	480 00 per year.	May 1, 1902.	
8	Isle Réaux (including 2 knots cable).	2½		50 00 or commission.	" 15, 1900.	
9	Isle Réaux (land line).	3½	Miss Julia Legace.	100 00 and 25 per cent commission.	May 1, 1902.	\$4 per month for messenger serv. in summer, and \$12 p. annum allowed for care of main batt. at (St. Isle. NOTE.—The telephone system on Grosse Isle since May, 1898, has comprised 1½ miles of 2 wire line with 11 connections or stations.
10	Grosse Isle quarantine office (including 2 knots cable).	1½				
11	Quarantine telephone system 2 wire line.	1½				
12	Totals.	52½		1,155 00		
13	Loop line (2 wires) St. Jean-St. Famille.	5½	P. Letourneau.	50 00 or commission.		

SESSIONAL PAPER No. 19

CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM.

CHICOUTIMI SECTION.

Loop Line (3 wires.) St. Jean-St. Paul		54 P. Lévesque		50 00 or Commission April 2, 1904....	
1 Bay St. Paul	9	F. Boivin	180 00 per annum.	Previous to April 1, 1885...	<p>The commission on business is 25 per cent of the Government tolls of the line; the amount guaranteed to be not less than \$50 per annum.</p> <p>Plus \$25 per year for operating branch line to L'Anse St. Jean.</p> <p>J. Fortin's division includes the branch line to L'Anse St. Jean.</p> <p>(This office had been closed since April 30, 1904.)</p>
2 St. Urbain	37	(A. Boivin, Michel Fortin, repair.	50 00 or commission	" 1, 1885...	
3 La Gallette	274	S. Ouellette	270 00 per annum...	" 1, 1885...	
4 Ferland	10	B. Lavoie	100 00 or commission	Aug. 25, 1902...	
5 St. Alexis	10	Mrs. D. Simard	50 00 "	Mar. 1, 1905...	
6 St. Alphonsse de Bagotville	3	Mrs. C. Levesque	50 00 "	Nov. 1, 1889...	
7 Chicoutimi	114	J. Fortin, repairer	420 00 per annum...	June 1, 1905...	
	98			" 1, 1897...	
Branch Line.			1,110 00		
8 St. Alexis	0	Mrs. D. Simard	75 00		
9 L'Anse St. Jean	10	P. V. Lavoie	50 00	Nov. 1, 1905...	
10 Petite Saguenay	30	(J. Martel, repairer...	210 00	May 1, 1904...	
11 Anse Cheval	8	(R. Martel	50 00	Jan. 1, 1904...	
12 St. Etienne	6	M. Tremblay	50 00	Sept. 1, 1903...	
St. Catharine Bay	7	Jos. Degagné	50 00	Feb. 1, 1905...	
	17	G. Boulienne (see North Shore W. B. Line).			
Totals	78		485 00		
	176		1,595 00		

MURRAY BAY—ST. AGNES SECTION.

1 Murray Bay	0	Mrs. F. Vincent	50 00	Jan. 1, 1904...	(See Murray Bay, Bersimis section.)
2 St. Agnes	74	Jos. Gaudreau	50 00	May 1, 1905...	
Trinity (Guay)	7	D. Bouchard	100 00		
	144				
1 Bay St. Paul	0	F. Boivin	50 00	Dec. 1, 1903...	(See Bay St. Paul, Chicoutimi section.)
Petite River	13	J. Bouchard	50 00		
	13		50 00		

Connections for these lines with the G. N. W. Telegraph System are made at Chicoutimi, Bay St. Paul and Murray Bay.

GOVERNMENT TELEGRAPH SERVICE—Continued.
CHICOUTIMI AND NORTH OF ST LAWRENCE TELEGRAPH SYSTEM—Continued.
CHICOUTIMI SECTION—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
1	Tadoussac.....	0	Eugene Caron.....	Commission.		
2	Sacré Cœur.....	124	(H. Gravel, repairer..	34 00 }		
3	Ste. Marguerite.....	8	(Miss L. Maltais.....	50 00 }		
4	Price Bros. & Co.....	2	Mrs. P. Hervieux.....	50 00 }		
5	Descente des Femmes.....	34	Company.....	Accommodation.		
6	Lac Laurent.....	9	S. Gagnon.....	50 00 }		
7	St. Fulgence.....	8	G. H. Gagnon.....	50 00 }		
8	St. Anne.....	8	P. Gauthier, repairer..	See below.		
9	Chicoutimi.....	1	D. Villeneuve.....	"		
1	St. Charles.....	0	B. Boucher.....	50 00	Sept. 1, 1903	
2	St. Ambrose.....	10	A. Sinaud.....	50 00	June 1, 1905	
3	St. Leonard.....	7	Geo. Gagnon.....	50 00	Sept. 1, 1903	
4	Shipshaw, North.....	6	J. Murdoch.....	50 00	" 1, 1903	
5	Shipshaw.....	3	F. Dufour.....	50 00	Nov. 1, 1905	
6	St. Anne.....	8	P. Gauthier, repairer..	200 00	Aug. 1, 1903	
			(D. Villeneuve, oper..	480 00	April 1, 1906	
			{ J. A. Couet, clerk..	180 00	April 1, 1906	
			{ G. Guay, messenger.	120 00	April 1, 1906	
		37		1,230 00		
	Branch Line.					
1	St. Anne.....	0	P. Gauthier.....	50 00	Jan. 1, 1904	(See St. Charles—Chicoutimi section).
	St. Fulgence.....	9	Rev. Geo. Gagnon.....	360 00		
		0	John Brisson.....			
		9		410 00		
1	St. Anne.....	0	P. Gauthier.....	50 00	Feb. 1, 1904	
	Range 9.....	3	Thos. Simard.....	50 00	Nov. 1, 1905	
	Lac Charles.....	3	A. Dufour.....	50 00	" 1, 1904	

SESSIONAL PAPER No. 19

3	Laç Clair	9	L. Houlianne	50 00	" 1, 1906
		15		200 00	
NORTH SHORE (West of Bersimis.)					
1	Murray Bay	0	Mrs. F. Vincent	50 00 or commission {	Previous to April 1, 1885....
2	Cap à l'Aigle	4	Mde. Bergeron	"	June 1, 1906....
3	St. Fidèle	6	Jos. Desbiens	50 00	Dec. 1, 1904....
4	Port au Pencil	7	{ A. Brassard	"	May 1, 1889....
			{ A. Brassard, repairer	210 00	June 1, 1887....
5	St. Siméon	4	D. Gaudin	50 00	Dec. 1, 1887....
6	Baie des Rochers	12	G. Savard	50 00	June 1, 1887....
7	St. Catherine Bay	17	{ G. Boulienne	100 00	Nov. 1, 1886....
8	St. Etienne	17	{ E. Boulienne (repr.)	210 00	Sept. 1, 1889....
9	Ladousac (1½ knot cable)	13	J. E. Caron	50 00	Nov. 1, 1888....
10	Sacré Cœur	12½	L. Maltais	50 00	Dec. 6, 1901....
11	Br. from Tadousac				
11	Bon Desir	10	Mad. E. Gautier	50 00	Aug. 1, 1904....
12	Bergervines	5	M. Savard	50 00	April 1, 1885....
13	Escoumains	12	J. H. Topping	50 00	" 1885....
14	Baie des Bacons	8	P. Bouchard	"	May 6, 1892....
15	Mille Vaches	8	J. A. Puisé	50 00 or commission	April 1, 1885....
16	Anse Hamilton	11½	C. P. Easton	50 00 or commission	Sept. 1, 1903....
17	Portneuf, light	6	{ S. Bouchard	50 00 or commission	July 1, 1890....
			{ E. Courbron (repr.)	420 00	April 1, 1888....
18	Sault au Cochon	7		50 00 or commission	
19	Bersimis	31	{ A. Maloney, agent	500 00	Sept. 21, 1896....
			{ E. Pope, distr. supt.	600 00	April 1, 1885....
	* Totals	174		2,920 00	

Plus \$25 per year, and \$12 for battery care for operation of branch to Guay.

Commission at 25 per cent, without guarantee at Baie des Bacons.
Accommodation office.

Sault au Cochon closed September 30, 1896.

Plus \$25 per year, and \$12 for battery care for operation of branch to Guay.

Commission at 25 per cent, without guarantee at Baie des Bacons. Accommodation office.

Sault au Cochon closed September 30, 1896.

* Note. — In the estimates the maintenance of the Chicoutimi and North Shore line is provided under head of North Shore Line. They are operated conjointly.

			50 00 or commission	Dec. 1, 1896
1	Pte aux Outardes (cable).	12	H. Tremblay	Dec. 1, 1896
2	Pte Paradis (Manicouagan) cable landing	18		
3	Songalls Mills 14 mile loop line from Pte Paradis	28	Accommodation	Aug. 15, 1885
4	Pointe des Monts	26	N. A. Comeau	Oct. 28, 1883
5	Trinity Bay West	18½	L. F. Faffard	Dec. 16, 1884
6	Trinity Bay East	54	Z. Poulin	May 1, 1889
7	Caribou Islands	2½	A. Bilodeau	Sept. 1, 1889
		7	I. Comeau	

The repeating office formerly at Manicouagan was removed to Bersimis in September, 1896.

6-7 EDWARD VII., A. 1907

GOVERNMENT TELEGRAPH SERVICE—Continued.

CHICOUTIMI AND NORTH ST. LAWRENCE TELEGRAPH SYSTEM—Continued. NORTH SHORE (East of Bersimis),

Number.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
8	Pointe aux Anglais	10½	Paul Côté	Accommodation office.	Jan. 10, 1895	No commission is paid at this office.
9	Pentecôte	6½	P. Molloy	250 00 per annum	Sept. 17, 1905	
10	Ste. Marguerite	47½	A. Theriault	180 00 per annum	July 1, 1888	
11	Clark City	5	Accommodation office.	25 p. c. commission	April 17, 1903	
12	Seven Islands	17½	P. E. Vignault, opr.	180 00 per annum	Jan. 2, 1884	
13	River Moisie	15½	L. N. Caron	540 00 " "	May 28, 1902	Plus 50 cents per day when absent on duty.
14	Pigou	28	J. Poirier	50 00 or commission	June 1, 1896	There is also an accommodation office in operation at Moisie in the fishing season.
15	Little River	29	Mrs. Peter Wright, opr.	100 00	Oct. 1, 1902	
16	Sheldrake	16	Peter Wright, repr.	112 00	" 1, 1902	
17	Thunder River	6½	Miss H. Leberge	50 00	" 10, 1900	
18	Magpie	14	Mrs. Alphonse Girard	50 00	Dec. 1, 1904	
19	St. John River	9	Mrs. H. Cody	50 00	Feb. 1, 1890	
20	Long Point	10	Geo. Molloy	50 00	Oct. 1, 1889	
21	Mingan	7	B. Chambers	50 00	" 1, 1889	
22	Point Esquimaux	24	(E. H. Teau Dist. Supt.	1,080 00 per annum	Nov. 1, 1891	Long Point is the repeating office for the Anticosti, cable in operation since September 1, 1891.
23	Betchouanes	20	Mrs. C. H. Tett, opr.	300 00	" 1, 1903	
24	Piastre Bay	23	M. J. Maloney	50 00 or commission	Oct. 1, 1889	
25	Watchou	15	(Mrs. D. C. Hould	240 00 per annum	Sept. 1, 1897	Allowance for office rent \$4 per month.
26	Agianus	21½	(Edw. Cyr, opr. & rep.	500 00	Nov. 2, 1902	Plus 50 cents per day when absent on duty.
27	Nataahquan	21	Jos. Picard, opr. & rep.	212 00	July 15, 1904	
28	Kegaska	33	(S. Tanguay, repr.	112 00	Sept. 18, 1902	
29	Musquaro	18	(Mrs. J. Beetz, opr.	100 09	" 18, 1902	
30	Romane	25	(Mrs. Cl. Bourque, opr.	100 00	Dec. 1, 1903	This office was closed on withdrawal of former agent from Sept. 4, 1903, \$12 rent to J. Beetz.
31	Wolf Bay	24	(John Bourque, repr.	100 00	" 1, 1903	
32	Point au Maurier	24	(S. Galant, repr.	112 00	Sept. 3, 1902	
			(Mrs. Galant, repr.	100 00	" 3, 1902	
			(C. Vignault, repr.	112 00	" 5, 1902	
			(Miss Vignault, opr.	100 00	" 5, 1902	
			(Geo. Anderson, repr.	112 00	" 16, 1902	
			(Miss Anderson, opr.	100 00	" 16, 1902	
			(J. W. Osborne, inspr.	500 00	" 1, 1902	
			(Wm. Foreman, opr. & rep.	212 00	" 1, 1902	Plus 50 cents per day when absent on duty.
			(M. Blais, repr.	112 00	June 1, 1903	
			(Miss R. Blais, opr.	100 00	Sept. 17, 1902	
			(R. Jones, repr.	150 00	Nov. 26, 1902	
			(Mrs. R. Jones, opr.	100 00	Sept. 19, 1902	
			(J. Galibois, repr.	112 00	" 19, 1902	
			(Miss P. Galibois, opr.	100 00	" 19, 1902	

SESSIONAL PAPER No. 19

33	Harrington.	20	(J. Jones, repr.	112 00	"	20, 1902
34	Whale Head.	17	(Mrs. Jones, opr.	112 00	"	20, 1902
35	Mutton Bay.	20	Nap. Nadeau, rep. & opr.	212 00	Jan.	21, 1903
36	Baie de Ha.	27	(Alf. Cormier, rep. & opr.	100 00	June	1, 1902
37	Ste. Augustine.	27	(Mrs. J. Monger, opr.	112 00	"	14, 1904
38	Coxipi.	24	(J. Monger, rep.	212 00	"	14, 1904
39	Rocky Bay.	30	(G. W. Burgess, rep. & opr.	212 00	Sept.	25, 1902
40	St. Paul River.	21	(Miss E. E. Chevalier, o.	100 00	April	20, 1904
41	Brador Bay.	29	(L. O. Chevalier, rep.	112 00	"	20, 1904
42	Blanc Sablon.	6	(G. Chevalier, repr.	112 00	Oct.	2, 1902
43	Forteau Bay.	13	(Miss Chevalier, opr.	110 00	"	2, 1902
44	Pointe Amour.	17	(Johnny Jones, opr.	100 00	June	13, 1903
45	Western Modiste.	16	(P. C. Vignault, insp.	500 00	Feb.	1, 1903
46	Red Bay.	13	(Thos. Morel, rep. & opr.	212 00	Oct.	1, 1902
47	Chateau Bay.	30	(A. Hart, repr. & opr.	212 00	July	19, 1902
48	Belle Isle.	23	(Thos. Whyatt, repr. & opr.	112 00	Feb.	17, 1903
			(Jas. Bolger, repr. & opr.	212 00	Oct.	5, 1902
			(Geo. Moore, repr.	112 00	"	9, 1902
			(Miss Moore, opr.	100 00	"	9, 1902
			(J. Mahoney, opr. & insp.	500 00	Sept.	1, 1902
			(Miss Buckel, asst. opr.	180 00	Dec.	1, 1902
			(J. McCarthy, local rpr.	160 00	Nov.	1, 1903
			(J. C. Colton, opr.	360 00	Sept.	14, 1902
			Gen. Inspector, North Shore System—			
			M. W. Green.	1,500 00		
	Totals.	916		13,176 00		

Closed June 14, 1904.

Plus 50 cents when absent on duty.

ONTARIO—PELEE ISLAND TELEGRAPH SERVICE

1	Leamington.	1	J. McR Selkirk, D. Supt.	50 00	Nov.	1, 1888
2	Bairds.	1	Accommodation office.		"	2, 1904
3	Leamington Dock.	1	F. Deslauriers, accom-		"	1, 1895
4	Tildens.	5	modation office.		April	1, 1905
5	Point Pelee.	5	Accommodation office.	Commission 25 p.c.	Nov.	1, 1888
			W. A. Grubb.			
6	Leamington Dock to North	17				
7	Point Cable.	1	J. R. Ledwell.	Commission 25 p.c.	June	1, 1899
8	North Point Lighthouse.	2	C. B. Quick.	"	Nov.	1, 1899
9	North Dock.	2		"	"	
10	McIntyre's Corner.	24	A. M. McCormick	"	Nov.	9, 1888
	West Dock.	24	Mrs. F. B. McCormick.	"	Aug.	1, 1904
	South Dock.	5		"		
	Totals.	42½		50 00		

This is the connection that was formerly made with the club house near by.

The cable formerly 9½ knots from Point Pelee to the Island is now laid as here indicated 17 knots. The change was effected in August, 1901. Closed in August, 1904.

NOTE: This line is operated by telephones.

GOVERNMENT TELEGRAPH SERVICE—Continued.
QU'APPELLE—ATHABASKA LANDING SECTION.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Mile.		\$ cts.		
1	Qu'Appelle.....	0	R. C. Macdonald, d. supt. J. S. Macdonald, gen. ins. C. P. R. Tel. Co.	1,500 00 2,000 00 420 00	Oct. 1, 1906 June 1, 1906 Dec. 1, 1906	The agent operator at Qu'Appelle is joint with the C. P. R.
2	Ft. Qu'Appelle	17	J. W. Wilson, lineman	600 00	Mar. 1, 1902	
3	Lipton	11	E. Johnston	600 00	"	
4	Tuchwood	20	C. P. R. Tel. Co.	Commission 10 p.c.	May 1, 1906	Agent operator at Lipton joint C. P. R.
5	Kitawa	46	J. Kelly	720 00	June 1, 1906	Agent operator paid by H. B. Co.
6	South Humboldt	78	A. Vonlandeburgh	720 00	Nov. 1, 1883	
7	Saskatoon.....	69	H. J. Macdonald	720 00	Feb. 1, 1904	
			C. P. R. Tel. Co.	900 00	Jan. 1, 1892	
			G. T. Clement, lineman	600 00	Oct. 16, 1903	Agent operator joint with C. P. R. Can. Northern agent act as agent on commission.
8	Warman.....	14	A. R. Douglas	Comm. 25 p.c. of receipts	Nov. 23, 1905	
9	Henrietta	38	W. J. Salisbury	720 00	Oct. 1, 1886	
10	Battleford	47	J. D. Noel	720 00	Oct. 1, 1900	
11	Br. Taylor	27	Geo. Donovan	600 00	Mar. 9, 1906	
12	Lloydminster	70	J. T. Gallahan	720 00	Dec. 1, 1900	
13	Onion Lake	50	E. A. McClenehan	600 00	April 1, 1904	
14	Moose	33	H. McClenehan	720 00	Aug. 1, 1889	
15	St. Paul des Metis	32	G. G. Mann	720 00	J. 1902	
16	Saddle Lake.....	13	J. A. Thérien	600 00	Dec. 1, 1893	
			J. W. Carroll	720 00	Sept. 1, 1900	Telephone line from Saddle Lake to Industrial School 6½ miles.
17	Victoria	37	R. Garton	600 00	Feb. 1, 1903	
18	Andrew	10	B. Carey	600 00	Mar. 15, 1906	Telephone line from Andrew to Whitford 6 miles.
19	Star	25	C. Norm, lineman	600 00	"	
20	Ft. Saskatchewan	18	E. A. Holmes	600 00	Aug. 2, 1904	
21	Edmonton	26	A. W. M. Campbell	600 00	Oct. 1, 1888	
22	Athabaska Landing	18	K. A. Morrison	720 00	June 7, 1904	
			W. McKay, lineman	780 00	May 1, 1886	
			Jas. McKernan	600 00	Oct. 1, 1904	
		750		18,680 00		
23	Whitford.....	7	The postmaster.....	Commission 25 p.c.	July 1, 1906	Connection is made with the telegraph office at Andrew.
	Telephone extension.					

SESSIONAL PAPER No. 19

BRANCH LINES.

		These branch lines are operated by the Edmonton District Telephone Co.	
23	Edmonton.	5	
24	Winnipeg.	8	
25	St. Mary Plains.	8	
26	Spruce Grove.	6	
	Stoney Plain Centre.	6	
		28	
27	St. Albert.	9	
28	Rave.	12	
29	Rivière qui Barre.	8	
30	Alexandria.	5	
		34	

WOOD MOUNTAIN SECTION.

1	Moose Jaw	C. P. R. Tel. Co.	240 00	Dec. 1, 1891	The Agt. operator at Moose Jaw is joint with C.P.R.
		H. Sikes, Batteryman.	120 00	Dec. 1, 1893	
2	Wood Mountain	J. H. Thomson.	600 00	Dec. 1, 1890	
		F. Brown, Lineman.	600 00	Nov. 1, 1906	
3	Willow Bunch	M. A. Noel.	600 00	Oct. 13, 1904	
			3 160 00		

DUCK LAKE SECTION.

1	Batoche	D. H. Grant.	120 00	Oct. 1, 1902	
2	Duck Lake.	A. H. Gordon	120 00	Feb. 1, 1903	
			240 00		

BANFF TELEPHONE SYSTEM.

	Local System in Banff National Park	H. Douglas (Supt.) J. H. Grierson (Lineman)	25 00		This system is looked after by Mr. Douglas, superintendent of the National Park.
			25 00		

TOTALS—Number of offices, 35.
Mileage, 951.
Employees, 35.
Salaries per annum, \$19,105.00.

6-7 EDWARD VII., A. 1937

GOVERNMENT TELEGRAPH SERVICE—Continued.
NORTH SYDNEY—MEAT COVE AND PORT HAWKESBURY SECTION.

Number.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salary per annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		(See Mabou.—Meat Cove section.)
1	Mabou.....	0	D. J. McDonald.....	50 00*	July 1, 1903	
2	Port Hood.....	10	Mrs. McDonald.....	50 00	" 1, 1904	
3	Judique.....	10	J. D. Cameron.....	50 00	" 1, 1903	
4	Craigmah.....	8	Miss M. McFarlane.....	50 00	" 1, 1903	
5	Port Hastings.....	10	Miss E. McDonald.....	120 00	" 1, 1903	
6	Port Hawkesbury.....	33	Angus Boyd.....	50 00	" 1, 1903	
7	River Bourgeois.....	26	D. Morrison.....	100 00	Nov. 1, 1903	Main battery at St. Peters.
8	St. Peter.....	6	Miss Mary D. Finlayson.....	50 00	June 22, 1906	
9	Lower Lardoise (½ mile loop).....	74	Miss Jessie Finlayson.....	50 00	" 1, 1903	
10	Grand River.....	7	Miss May Hardy.....	50 00	" 1, 1903	
11	Pourchu.....	26	Miss C. Grant.....	360 00	Jan. 16, 1904	Repeating office. Increase subject to approval.
12	Gabarous (3 mile loop).....	16	Wesley Townsend.....	50 00	Feb. 1, 1904	
13	Louisbourg.....	14	Miss Maude Dickson.....	50 00	June 1, 1904	\$50 additional to Main & Dieu agency for care of main battery.
14	Main & Dieu.....	1	E. E. Pope.....	50 00	Aug. 15, 1904	
15	To cable landing.....	1	J. T. Martel.....	50 00	" 1, 1904	
	Cable across channel	14				
	Scatarie Island (Western Light).....	74				
	" (Eastern Light).....					
	<i>Repairs Sections.</i>					
	Mabou and Judique.....		J. H. Campbell.....			
	Judique and Port Hawkesbury.....		J. N. McIsaac.....	420 00	Aug. 1, 1904	(See Mabou.—Meat Cove section.)
	Port Hawkesbury Gabarous.....		J. E. Biset Gent. Repr.....			
	Gabarous.....					
	Junction (wire only 3 miles).....		No appointments, only			This line was opened for business Dec. 11, 1903.
	Marion Bridge.....		the terminal offices in			
	Perry Lew.....		operation.			
	Leiche's (reel).....					
	North Sydney.....					
	Totals.....	292½		980 00		

* Or commission. The commission is 25 per cent of the Government line tolls, guaranteed at rate of \$50 per annum. North Sydney transfer office, connection with W. U. Telegraph system.

SESSIONAL PAPER No. 19

NOVA SCOTIA TELEGRAPH SYSTEM.
CAPE SABLE SECTION.

1	Barrington.....	0			
2	Newelton (including 1½ knots cable).....	11			
3	Cape Sable Island light-house (including ¾ mile cable).....	6½			
	Totals.....	17½			

This line has been leased to the Barrington Telephone Company from August 12, 1897. The lease is terminable at any time.

EAST COAST SECTION.

N. B.—In connection with the Signal Service a land line, 208 miles in length, was erected in 1831, between Canson and Halifax, for a bonus of \$10,000, and is maintained and operated by the Western Union Telegraph Company, without further cost to the Government.

BAY OF FUNDY, N.B., TELEGRAPH SYSTEM.
GRAND MANAN SECTION.

1	Long Eddy Cable Hut to. Flagg's Cove.....	3	Mrs. C. C. Seely (D. Su.) Miss V. A. McFarlane A. Gilmour, repairer.....	540 00 50 00 or commission. 60 00	Nov. 18, 1890 Oct. 1, 1903 Dec. 1, 1894	*The commission is 25 p.c. on all business to and from the office in each instance; and commission guaranteed not to be less than at the rate of \$50 per annum. When 60 p.c. commission is paid there is no guarantee as to amount.
2	Castalia.....	2½	G. E. Dalzell.....	Commission 25 p.c.*	June 1, 1898	
3	Woodward's Cove.....	3½	W. A. Fraser.....	" 50 p.c.	Feb. 28, 1893	
4	Grand Harbour.....	2	J. L. Newton.....	75 00 or commission	April 1, 1897	
5	Seal Cove.....	4½	J. A. Ingersoll.....	50 00	Sept. 22, 1899	\$25 per annum is included for repeating Whitehead branch.
6	Southern Head Lighthouse Branch Line.	5½	O. McLaughlin.....	Commission 25 p.c.	April 22, 1897	Southern head office is now operated by telephone from Seal Cove.
7	Grand Harbour.....	0				
8	Cheney's Island (¾ knot cable).....	4½	S. E. Russell.....	" 25 p.c.	Feb. 1, 1891	
	Whitehead Island (¾ knot cable).....	1½	Mrs. W. Cassaboom.....	50 00 or commission..	" 1, 1903	
	Cable, Long Eddy to Liberty Cove.....	7½				
	Liberty Cove Cable Hut to. Welchpool.....	7½	{ Wellington Parker, Lieutenantman. G. F. Mitchell.....	2 00 per day. 210 00 and commission.	May 1, 1906	Employed occasionally.
9	Cable across channel.....	1½	J. Cushing.....	200 00	Dec. 26, 1881	
10	Eastport, Maine, U.S.A. Totals.....	44½		1,035 00		

6-7 EDWARD VII., A. 1907

GOVERNMENT TELEGRAPH SERVICE—Continued.
CHATHAM-ESCOMINAC, N. B., TELEGRAPH SYSTEM.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
1	Chatham.	0	Great Northwestern Telegraph Co.	185 00		
2	Black Brook.	5½	M. McDougall.	50 00 or commission.	July 1, 1904.	This amount is paid for supervision of the line and office accommodation at Chatham. The commission is 25 p. c. of the Government line tariff receipts in each instance, and is guaranteed to amount to not less than \$50 per annum. \$12 per annum allowed for care of main battery at Point-à-l'Écluse.
3	Basin du Vin.	15	Mrs. M. Williston.	50 00 "	Mar. 1, 1886.	
3	Lower Hardwicke.	6	Mrs. M. Brimmer.	50 00 "	Aug. 1, 1891.	
4	Escominac.	3½	D. Lewis.	50 00 "	Sept. 1, 1886.	
5	Point-à-l'Écluse lighthouse	12	K. R. McLennan.	50 00 "	Nov. 1, 1883.	
6	Totals.	42		435 00		

GROSSE ISLE QUARANTINE TELEGRAPH SYSTEM.

1	Quebec.	0	Great North-western Telegraph Co.	185 00		This amount is paid for supervision of the line, and covers rent of pole line from Quebec to L'Ange-Gardien, for which \$35 per annum is charged. This commission is 25 p. c. of the Government line tariff in each instance, and guaranteed to amount to not less than \$50 per annum.
2	L'Ange-Gardien.	13				
3	St. Pierre.	4½	C. Turcotte.	50 00 or commission.	Mar. 1, 1885.	
4	St. Laurent.	6½	M. Plante.	50 00 "	April 7, 1886.	
			M. Gobeil.	120 00 and 25 per cent commission.	Sept. 15, 1888.	
5	St. Jean.	7	P. Pouliot.	120 00 and 25 per cent commission.	July 1, 1888.	For local agency. Chief operator and repairer.
6	St. François.	6½	O. Lemelin.	480 00 per year.	May 1, 1902.	
7	Isle Réaux (including 2 knots cable).	3½		50 00 or commission.	" 15, 1900.	
8	Isle Réaux (land line).	2½				
	Grosse Isle quarantine office (including 2 knots cable).	3½	Miss Julia Legace.	100 00 and 25 per cent commission.	May 1, 1902.	\$4 per month for messenger serv. in summer, and \$12 p. annum allowed for care of main batt. at Gr. Isle. NOTE.—The telephone system on Grosse Isle since May, 1888, has comprised 1½ miles of 2 wire line with 11 connections or stations.
	Quarantine telephone sys- tem 2 wire line.	1½				
	Totals.	52½		1,155 00		
	Loop line (2 wires) St. Jean- Ste. Famille.	5½	P. Letourneau.	50 00 or commission.		

SESSIONAL PAPER No. 19

CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM.

CHICOUTIMI SECTION.

Loop Line (2 wires.)	5½	P. Lévesque	50 00 or commission	April 2, 1904....
St. Jean-St. Famille				
1 Bay St. Paul		F. Boivin	180 00 per annum. {	Previous to
2 St. Urbain	9	(A. Boivin)	25 p.c. commission....	April 1, 1885...
3 La Gaiette	27	(Michel Fortin, repair.	50 00 or commission....	" 1, 1885 ...
4 Ferland	37½	S. Ouellette	270 00 per annum...	
5 St. Alexis	10	B. Lavoie	100 00 or commission	Aug. 25, 1902...
6 St. Alphonse de Bégoville	3	Mrs. D. Simard	" "	Mar. 1, 1905...
7 Chicoutimi.	11½	Mrs. C. Levesque	50 00	Nov. 1, 1889...
		J. Fortin, repairer	420 00 per annum...	June 1, 1906...
	98			" 1, 1897...
Branch Line.			1,110 00	
8 St. Alexis	0	Mrs. D. Simard	75 00	
9 L'Anse St. Jean	30	P. V. Lavoie	50 00	Nov. 1, 1905...
10 Petite Saguenay	8	(J. Martel, repairer..	210 00	May 1, 1904...
11 Anse Cheval	6	(R. Martel	50 00	Jan. 1, 1904...
12 St. Etienne	7	M. Tremblay	50 00	Sept. 1, 1903...
St. Catharine Bay.	17	Jos. Degagné	50 00	Feb. 1, 1905...
	78	G. Boulienne (see North		
		Shore W. B. Line.).	485 00	
Totals	176		1,595 00	

*The commission on business is 25 per cent of the Government tolls of the line; the amount guaranteed to be not less than \$50 per annum.

Plus \$25 per year for operating branch line to L'Anse St. Jean.
J. Fortin's division includes the branch line to L'Anse St. Jean.

(This office had been closed since April 30, 1904.)

MURRAY BAY—ST. AGNES SECTION.

1 Murray Bay	0	Mrs. F. Vincent		(See Murray Bay, Bersimis section.)
2 St. Agnes	7½	Jos. Gaudreau	50 00	Jan. 1, 1904...
Trinity (Guay)	7	D. Bouchard	50 00	May 1, 1906...
	14½		100 00	
1 Bay St. Paul	0	F. Boivin		(See Bay St. Paul, Chicoutimi section.)
Petite River	13	J. Bouchard	50 00	(Payment at Bay St. Paul \$25 per year and \$12 for battery care, for operation of this branch to Petite River.
	13		50 00	

Connections for these lines with the G. N. W. Telegraph System are made at Chicoutimi, Bay St. Paul and Murray Bay.

GOVERNMENT TELEGRAPH SERVICE—Continued.
CHICOUTIMI AND NORTH OF ST LAWRENCE TELEGRAPH SYSTEM—Continued.

CHICOUTIMI SECTION—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
1	Tadoussac.....	0	Eugene Caron.....	Commission.		
2	Sacré Cœur.....	12½	{ H. Gravel, repairer..	30 00 }		
3	Ste. Marguerite.....	8	{ Miss. L. Malais.....	50 00 }		
4	Price Bros. & Co.....	2	Mrs. P. Hervieux.....	50 00		
5	Descente des Femmes.....	94	Company.....	Accommodation.		
6	Lac Laurent.....	9	Aug. Villeneuve.....	50 00		
7	St. Fulgence.....	8	S. Gagnon.....	50 00		
8	St. Anne.....	8	G. H. Gagnon.....	50 00		
9	Chicoutimi.....	1	P. Gauthier, repairer..	See below.		
			D. Villeneuve.....	"		
1	St. Charles.....	0	B. Boucher.....	50 00	Sept. 1, 1903.	
2	St. Ambrose.....	10	A. Simard.....	50 00	June 1, 1905.	
3	St. Leonard.....	7	Geo. Gagnon.....	50 00	Sept. 1, 1903.	
4	Shipsaw, North.....	6	J. Murdoch.....	50 00	" 1, 1903.	
5	Shipsaw.....	3	F. Dufour.....	50 00	Nov. 1, 1905.	
6	St. Anne.....	8	P. Gauthier, repairer..	200 00	Aug. 1, 1903.	
			{ D. Villeneuve, oper..	480 00	April 1, 1906.	
		3	{ J. A. Couet, clerk..	180 00	April 1, 1906.	
			{ G. Guay, messenger.	120 00	April 1, 1906.	
		37		1,230 00		
	<i>Branch Line.</i>					
	St. Anne.....	0	P. Gauthier.....	50 00	Jan. 1, 1904.	(See St. Charles—Chicoutimi section).
1	St. Fulgence.....	9	Rev. Geo. Gagnon.....	360 00		
		0	John Brisson.....			
		9		410 00		
	St. Anne.....	0	P. Gauthier.....	50 00	Feb. 1, 1904.	
1	Range 9.....	3	Thos. Simard.....	50 00	Nov. 1, 1906.	
2	Lac Charles.....	3	A. Dufour.....	50 00	" 1, 1904.	

SESSIONAL PAPER No. 19

3	Lac Clair	9	L. Boulianne	50 00	1, 1900.	
		15		200 00		
NORTH SHORE (West of Bersimis.)						
1	Murray Bay	0	Mrs. F. Vincent.	30 00 or commission	Previous to April 1, 1885	Plus \$25 per year, and \$12 for battery care for operation of branch to Guay.
2	Cap à l'Aigle	4	Mde. Bergeron	50 00	June 1, 1905	
3	St. Fidèle	6	Jos. Desbiens	50 00	Dec. 1, 1904	
4	Port au Perail	7	{ A. Brassard	50 00	May 1, 1889	
			{ A. Brassard, repairer	210 00	June 1, 1887	
5	St. Siméon	4	D. Gaudin	50 00	Dec. 1, 1887	
6	Baie des Rochers	12	G. Savard	50 00	June 1, 1887	
7	St. Catherine's Bay	7	{ G. Boulienne	100 00	Nov. 1, 1886	
8	St. Etienne	17	{ E. Boulienne (rep't.)	210 00	Sept. 1, 1899	
9	Tadoussac (1½ knot cable).	13	J. E. Caron	50 00	Nov. 1, 1888	
10	Sacré Cœur.	12½	L. Maltais	50 00	Dec. 6, 1901	
11	Br. from Tadoussac	10	Mad. E. Gautier	50 00	Aug. 1, 1904	
12	Bon Desir	5	M. Savard	50 00	April 1, 1885	
13	Bergeronnes	12	J. H. Topping	50 00	" 1885	
14	Économains	8	P. Bouchard	50 00 or commission	May 6, 1892	Commission at 25 per cent, without guarantees at Baie des Bacons.
15	Baie des Bacons	8	J. A. Puise	50 00 or commission	April 1, 1903	Accommodation office.
16	Mille Vaches	11½	C. P. Easton	50 00 or commission	Sept. 1, 1903	
17	Anse Hamilton	6	{ S. Bouchard	50 00 or commission	July 1, 1890	
			{ E. Courbron (rep't.)	420 00	April 1, 1888	
18	Portneuf, light.	7	{ A. Maloney, agent.	50 00 or commission	Sept. 21, 1896	
19	Sault au Cochon	31	{ E. Pope, distr. supt.	600 00	April 1, 1886	Sault au Cochon closed September 30, 1896.
	Bersimis					
	* Totals	174		2,920 00		

* NOTE. — In the estimates the maintenance of the Chicoutimi and North Shore line is provided under head of North Shore Line. They are operated conjointly.

NORTH SHORE (East of Bersimis).						
1	P'te aux Outardes (cable).	12	H. Tremblay	50 00 or commission	Dec. 1, 1896	
2	P'te Paradis (Manicouagan) cable landing.	18				
3	Songalls Mills 14 mile loop line from P'te Paradis.	28	Accommodation.	25 p. c. commission	Aug. 1, 1901	
4	River Godbout (cable).	26	N. A. Comeau	50 00 or commission	Oct. 15, 1885	
5	Pointe des Monts	18½	L. F. Faffard	50 00	Dec. 28, 1883	
6	Trinity Bay West	54	Z. Poulin	50 00	May 16, 1884	
7	Trinity Bay East	2½	A. Blodeau	25 p. c. or commission	Sept. 1, 1889	
	Caribou Islands	7	L. Comeau	"	Sept. 1, 1889	

The repeating office formerly at Manicouagan was removed to Bersimis in September, 1896.

GOVERNMENT TELEGRAPH SERVICE—Continued.

Number.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
8	Pointe aux Anglais.	10 1/2	Paul Côté.	Accommodation office.	Jan. 10, 1895.	No commission is paid at this office.
9	l'Entecost.	4 1/2	P. Molloy.	250 00 per annum.	Sept. 17, 1905.	
10	Ste. Marguerite	5 1/2	A. Theriault.	180 00 per annum.	July 1, 1888.	
11	Clark City.	4	Accommodation office.	25 p. c. commission.	April 17, 1903.	
12	Seven Islands.	17 1/2	(P. E. Vignault, opr.	180 00 per annum.	Jan. 29, 1884.	Plus 50 cents per day when absent on duty.
13	River Moisie.	15 1/2	(L. N. Caron.	540 00 "	May 29, 1902.	There is also an accommodation office in operation at Moisie in the fishing season.
14	Pigou.	28	J. Poirier.	50 00 or commission.	June 1, 1886.	
15	Little River.	29	(Mrs. Peter Wright, opr.	100 00 "	Oct. 1, 1902.	
16	Sheldrake.	15	(Peter Wright, repr.	112 00 "	" " "	
17	Thunder River.	6 1/2	Mrs. H. Leberge.	50 00 "	Dec. 1, 1904.	
18	Magpie.	14	Mrs. Alphonse Girard.	50 00 "	Feb. 1, 1880.	
19	St. John River.	9	Mrs. H. Cady.	50 00 "	Oct. 1, 1889.	
20	Long Point.	10	Geo. Molloy.	50 00 "	" " "	
21	Mingan.	7	(E. H. Tétu Dist. Supt.	1,080 00 per annum.	Nov. 1, 1881.	Long Point is the repeating office for the Anticosti cable in operation since September 1, 1891.
22	Point Esquimaux.	24	(Mrs. C. H. Tétu, opr.	1,300 00 "	" " "	
23	Betchouanes.	20	M. J. Maloney.	50 00 or commission.	Oct. 1, 1889.	Allowance for office rent \$4 per month.
24	Piastre Bay.	23	(Mrs. D. C. Hould.	240 00 per annum.	Sept. 2, 1902.	Plus 50 cents per day when absent on duty.
25	Watchou.	15	Edwd. Cyr, inspr.	500 00 "	Nov. 2, 1902.	
26	Aguanus.	21 1/2	(S. Tanguay, repr.	212 00 "	July 15, 1904.	
27	Nataashquan.	21	(S. Tanguay, repr.	112 00 "	Sept. 18, 1902.	
28	Kegaska.	33	(Mrs. J. Beetz, opr.	100 09 "	" " "	This office was closed on withdrawal of former agent from Sept. 4, 1903, \$12 rent to J. Beetz.
29	Masquaro.	18	(Mrs. Cl. Bourque, opr.	100 00 "	Dec. 1, 1903.	
30	Romane.	25	(John Bourque, repr.	100 00 "	" " "	
31	Wolf Bay.	24	(S. Galant, repr.	112 00 "	Sept. 3, 1902.	
32	Pointe au Maurier.	24	(Mrs. Galant, opr.	100 00 "	" " "	
			(C. Vignault, repr.	112 00 "	" " "	
			(Miss Vignault, opr.	100 00 "	" " "	
			(Geo. Anderson, repr.	112 00 "	" " "	
			(Miss Anderson, opr.	100 00 "	" " "	
			(J. W. Osborne, inspr.	600 00 "	" " "	
			(Wm. Foreman, opr. & rep.	212 00 "	June 1, 1903.	
			(M. Blais, repr.	112 00 "	Sept. 17, 1902.	
			(Miss R. Blais, opr.	100 00 "	" " "	
			(R. Jones, repr.	150 00 "	Nov. 26, 1902.	
			(Mrs. R. Jones, opr.	100 00 "	" " "	
			(J. Galbois, repr.	112 00 "	Sept. 19, 1902.	
			(Miss F. Galbois, opr.	100 00 "	" " "	Plus 50 cents per day when absent on duty.

SESSIONAL PAPER No. 19

33	Harrington	20	J. Jones, repr.	112 00	"	20, 1902
34	White Head	17	Mrs. Jones, opr.	100 00	Jan.	21, 1903
35	Mutton Bay	20	Nap. Nadeau, rep. & opr.	212 00	June	1, 1902
36	Bole de Ha	27	Alf. Cormier, rep. & opr.	444 00	"	14, 1904
37	Ste. Augustine	27	Mrs. J. Monger, opr.	100 00	"	14, 1904
38	Coxipi	24	G. W. Burgess, rep. & opr.	212 00	Sept.	25, 1902
39	Rocky Bay	30	Miss P. E. Chevalier, o.	212 00	April	20, 1904
40	St. Paul River	21	L. O. Chevalier, rep.	112 00	"	20, 1904
41	Brador Bay	29	G. Chevalier, repr.	112 00	Oct.	2, 1902
42	Blanc Sablon	13	Miss Chevalier, opr.	110 00	"	2, 1902
43	Forteau Bay	17	Johnny Jones, opr.	100 00	June	13, 1903
44	Pointe Amour	16	P. C. Vignault, insp.	500 00	Feb.	1, 1903
45	Western Modiste	13	Thos. Morel, repr. & opr.	212 00	Oct.	1, 1902
46	Red Bay	30	A. Hart, repr. & opr.	212 00	July	19, 1902
47	Chateau Bay	23	Thos. Whyatt, repr. & opr.	112 00	Feb.	17, 1903
48	Belle Isle	23	Jas. Bolger, repr. & opr.	212 00	Oct.	5, 1902
			Geo. Moore, repr.	112 00	"	9, 1902
			Miss Moore, opr.	100 00	"	9, 1902
			J. Mahoney, opr. & insp.	500 00	Sept.	1, 1902
			Miss Buckel, asst. opr.	180 00	Dec.	1, 1902
			J. McCarthy, local rpr.	100 00	Nov.	1, 1903
			J. C. Colton, opr.	360 00	Sept.	14, 1902
			Gen. inspector, North Shore System			
			M. W. Green	1,500 00		
	Totals	916		13,176 00		

Closed June 14, 1904.

Plus 50 cents when absent on duty.

ONTARIO—PELEE ISLAND TELEGRAPH SERVICE.

1	Leamington	1	J. McR Selkirk, D. Supt.	50 00	Nov.	1, 1888
2	Bairds	1	Accommodation office.		"	2, 1904
3	Leamington Dock	5	F. Deslauriers, accom.		"	1, 1896
4	Tildens	5	modation office.		April	1, 1905
5	Point Pelee	17	W. A. Grubb	Commission 25 p.c.	Nov.	1, 1888
6	Leamington Dock to North Point Cable	1	J. R. Ledwell	Commission 25 p.c.	June	1, 1899
7	North Point Lighthouse	2	C. B. Quick	"	Nov.	1, 1888
8	McIntyre's Corner	2	A. M. McCormick	"	Nov.	9, 1888
9	West Dock	5	Mrs. F. B. McCormick	"	Aug.	1, 1904
10	South Dock	5		"		
	Totals	42		50 00		

This is the connection that was formerly made with the club house near by.

The cable formerly 9 1/2 knots from Point Pelee to the Island is now laid as here indicated 17 knots. The change was effected in August, 1901.
Closed in August, 1904.

NOTE: This line is operated by telephones.

GOVERNMENT TELEGRAPH SERVICE—Continued.
QU'APPELLE—ATHABASKA LANDING SECTION.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Mile.		\$ cts.		
1	Qu'Appelle.....	0	R. C. Macdonald d. supt. J. S. Macdonald gen. ins. C. P. R. Tel. Co.	1,500 00 2,000 00 420 00	Oct. 1, 1905.... June 1, 1905.... Dec. 1, 1906....	The agent operator at Qu'Appelle is joint with the C. P. R.
2	Ft. Qu'Appelle	17	J. W. Wilson, lineman	600 00	Mar. 1, 1902....	
3	Lipton	11	E. Johnston	600 00	" " " " " "	
4	Touchwood	29	C. P. R. Tel. Co.	Commission 10 p.c.	May 1, 1906....	Agent operator at Lipton joint C. P. R. Agent operator paid by H. B. Co.
5	Kutawa	6	J. Kelly	720 00	June 1, 1906....	
6	South Humboldt	78	A. VonLindeburgh	720 00	Nov. 1, 1883....	
7	Saskatoon.....	69	H. J. Macdonald	720 00	Feb. 1, 1904....	
			C. P. R. Tel. Co.	300 00	Jan. 1, 1892....	
			G. T. Clement, lineman	600 00	Oct. 16, 1903....	Agent operator joint with C. P. R. Can. Northern agent act as agent on commission.
8	Warman.....	14	A. R. Douglas	Comm. 25 p.c. of receipts	Nov. 23, 1905....	
9	Henrietta	38	W. J. Salisbury	720 00	Oct. 1, 1886....	
10	Battleford	47	J. D. Noel	720 00	" " " " " "	
11	Br. saylor	27	Geo. Donovan	600 00	Mar. 9, 1905....	
12	Lloydminster	70	J. T. Gallahan	720 00	Dec. 1, 1900....	
13	Onion Lake	50	E. A. McCleneghan	600 00	April 1, 1904....	
14	Moose	33	H. McCleneghan	720 00	Aug. 1, 1899....	
15	St. Paul des Metis	32	G. G. Mann	720 00	" " " " " "	
16	Saddle Lake.....	13	J. A. Therien	600 00	Dec. 1, 1899....	Telephone line from Saddle Lake to Industrial School 6 1/4 miles.
			J. W. Carroll	720 00	Sept. 1, 1900....	
17	Victoria	37	R. Gordon	600 00	Feb. 1, 1905....	Telephone line from Andrew to Whitford 6 miles.
18	Andrew	10	B. Carey	600 00	Mar. 15, 1906....	
19	Star	18	C. Norm, lineman	600 00	" " " " " "	
20	Ft. Saskatchewan	25	E. A. Holmes	600 00	Aug. 2, 1904....	
21	Edmonton	18	A. W. M. Campbell	600 00	Oct. 1, 1898....	
22	Athabaska Landing	98	K. A. Morrison	720 00	June 7, 1904....	
			W. McKay, lineman	780 00	May 1, 1898....	
			Jas. McKernan	600 00	Oct. 1, 1904....	
		750		18,680 00		
23	Whitford	7	The postmaster.....	Commission 25 p.c.	July 1, 1906....	Connection is made with the telegraph office at Andrew.
	Telephone extension.					

SESSIONAL PAPER No. 19

BRANCH LINES.

							These branch lines are operated by the Edmonton District Telephone Co.
23	Edmonton.....	6					
24	Winterburn.....	54					
25	Stony Plain.....	8					
26	Stony Plain Centre.....	64					
		28					
27	St. Albert.....	9					
28	Rare.....	12					
29	Rivière qui Barre.....	8					
30	Alexandria.....	5					
		34					

WOOD MOUNTAIN SECTION.

1	Moose Jaw.....		C. P. R. Tel. Co.....	240 00	Dec. 1, 1891.....	The Agt. operator at Moose Jaw is joint with C.P.R.
2	Wood Mountain.....	90	{ H. Sikes, Batteryman. J. H. Thomson.....	120 00 600 00	{ Dec. 1, 1893 Dec. 1, 1890.....	
3	Willow Bunch.....	40	{ F. Brown, Lineman.. M. A. Noel.....	600 00 600 00	{ Nov. 1, 1905 Oct. 19, 1904.....	
		130		2 160 00		

DUCK LAKE SECTION.

1	Batoche.....		D. H. Grant.....	120 00	Oct. 1, 1902.....
2	Duck Lake.....	9	A. H. Gordon.....	120 00	Feb. 1, 1903.....
		9		240 00	

BANFF TELEPHONE SYSTEM.

Local System in Banff Na- tional Park.....		H. Douglas (Supt.) J. H. Grierson (Line- man).....	25 00		This system is looked after by Mr. Douglas, super- intendent of the National Park.
			25 00		

Totals--Number of offices, 35.
Mileage, 961.
Employees, 35.
Salaries per annum, \$19,105.00.

GOVERNMENT TELEGRAPH SERVICE—Continued.
LINES IN BRITISH COLUMBIA.

No.	Stations.	Inter- mediate Distance.	Agent, &c.	Positions.	Salaries per Annum.	Date of Appointment.	Memo.
	<i>Kamloops—Lower Nicola. Telephone Line.</i>	Miles.	(See note in margin).		\$ cts.		
1	Kamloops.	0	(C. S. Stevens.	Dist. Sup.	720 00	June 1, 1904.	NOTE.—This line is operated under the superintendence of the resident engineer at Victoria, and for conversations 25c. for 5 minutes, half that rate for each additional 5 Minutes or fraction thereof. NOTE.—The lessees pay a monthly rent for the connections, and are allowed 25 per cent commission on local tolls for messages and conversations of non-subscribers.
2	Anderson Creek.	12	(Miss B. McKnight.	Clk. & Ag.	420 00	July 1901.	
3	Nicola.		W. McLeod.	Agent.		" "	
4	Stumps Lake.	13	Mrs. M. V. Munro.	Exc. oper.	486 00	" "	NOTE.—Three additional connections in July, 1901. Add at Nicola Lake, July 1, or Government Office, Dr. Sutton, A. R. Carrington.
5	Beaver Ranch.		Thos. Bunman.	"		" "	
6	Quelchena.	20	J. W. Moor.	"		" "	
7	Nicola Lake.	9	E. O'Rourke.	"		May 1900.	NOTE.—Three additional connections in July, 1901. Add at Nicola Lake, July 1, or Government Office, Dr. Sutton, A. R. Carrington.
8	Contlee.		A. E. Howse.	"		July 1901.	
9	Lower Nicola.	13	Blair & Co.	"		May 1900.	
10	Aspen Grove.	24	G. Armstrong.	"			NOTE.—See note in body of report.
11	Otter Valley.	24		"			
12	Princeton.	26	A. E. Howse & Co.	"	180 00	Feb. 1, 1905.	
13	Hedley.	25	John Love.	"	480 00	" "	NOTE.—See note in body of report.
14	Keremosa.	20		"		" "	
15	Fairview.	12		"		" "	
16	Penticton.	37	J. A. Schubert.	"	120 00	" "	
	Total.	235					

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—Continued.
BRITISH COLUMBIA—Continued.

Number.	Stations.	Inter- mediate Distance.	Agents, &c.	Positions.	Salaries per Annum.	Date of Appoint- ment.	Memo.
	<i>Vernon-Kilowna Line.</i>	Miles.			\$ cts.		
1	Vernon	0	(Miss G. E. Seaton A. S. Muir.	Agent and operator. Telephone Agent.	360 00 Commiss.	Mar. 1, 1905 " " 1, 1905	This line is operated both as a telephone and telegraph line. Joint agent with C. P. Telegraph. The commission is 25 per cent of the Government line tolls.
2	Kilowna	35	(H. H. Miller & Co A. L. Weeks.	Agts tel. and telegr. Lineman	360 00 720 00	" " 1, 1905 Aug. 1, 1905	
	Total.	35			1,440 00		

GOVERNMENT TELEGRAPH SERVICE—Continued.
BRITISH COLUMBIA—Continued.

Number.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appoint- ment.	Memo.
	<i>Victoria—Cape Beale.</i>	Miles.	(See note in margin).	\$ cts.		
1	Victoria	0	E. Houghton, oper. (C.P. Tel.)	200 00	Nov. 1, 1891	None.—The superintendence of this line has been in the hands of the resident engineer at Victoria since October, 1901, when the arrangement theretofore in operation with the C. P. Ry. Co. was terminated. Proportion of salary.
2	Sooke	18	Percy Clark, line repairer.	540 00	Dec. 1, 1903	
	*Otter Point	8	E. Gordon, agent and operator.	720 00	" 1, 1891	
3	*Jordan River (Shirley)	10	E. Clark	540 00	" 1, 1903	
4	Port San Juan (Port Renfrew)	30	{ E. C. Williams	240 00	Sept. 22, 1903	
			{ J. W. Williams, repairer	520 00	May 1, 1905	
5	Carmanah Lighthouse	24	{ W. P. Daykin, repairer	240 00	Nov. 1, 1891	Allowance of \$7 50 horse hire when necessary to come to Victoria repairing line. During winter months only.
	(Clooose 2 miles west.)		{ D. Logan, repairer	540 00	April 1, 1898	
6	Cape Beale	28	{ R. S. Daykin, repairer	540 00	June 1, 1905	
			M. Paterson, agent & operator	120 00	Sept. 1, 1899	
	Totals	118		3,660 00		

* Telephone connections for the convenience of several firms in the neighbourhood have been established at *Jordan River* for Messrs. Bell, Irving & Co., Point-no-Point; The B. C. Packer's A-so., Point-no-Point and *Jordan River*; Capital City Canning Co., French's Ranch; J. H. Todd & Co., Coal Creek; 5 connections, rent paid \$12 each for a canning season. At *Otter Point* for Messrs. J. H. Todd & Son, The B. C. Packer's A-so., Capital City Canning Co. and the B. C. Mesa; one connection in common at *Sooke Wharf*, \$12 for the season.

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—Continued.
BRITISH COLUMBIA—Continued.

No.	Stations.	Inter- mediate Distance.	Agents, &c.	Positions.	Salaries per Annum.	Date of Appoint- ment.	Memo.
	<i>Nanaimo-Comox.</i>	Miles.			\$ cts.		
1	Nanaimo	0	{ W. F. Archibald. A. E. Booth, Joint with C.P.R.	Agent and operator..	306 00	Mar. 1, 1896	The amount comprises \$20 per month for agency and operation, \$3 for messenger service and \$2.50 for battery care.
2	Wellington	5	{ E. & N. Ry. Co.. Mra. R. Williams	Assistant operator ..	120 00	June 1, 1902	
3	Parksville	23	{ W. Mills.. Miss E. McDon- ald	Agent and operator..	360 00	Dec. 1, 1897	
4	Union Bay	32½	{ Thos. Hudson.. J. Dunsmuir..	Lineman	360 00	June 1, 1903	Parkville, Quelicum section.
5	Union Mines			Agent and operator..	360 00	" 3, 1898	See mention of this in body of report (1897-98).
6	Cumberland	10		Lineman	780 00	Nov. 17, 1898	
7	Courtney	7		Accommodat'n office.	120 00	Apr. 28, 1898	
8	Comox	7½	{ J. McPhee & Son. M. McDonald	Agent and operator { Telephone Agent... Agent and operator..	com. 25 p.c. 360 00	Nov. 1, 1896	Courtney and comox communicate by telephone at prearranged intervals.
	Total	81			2,766 00		
	<i>Parkville, Alberni and Cape Beale Line.</i>						
	Parkville	0	(See above).				Note—The repairs of this line has been done jointly with the Can. Pac. Telegraph since December 1, 1902.
1	Alberni	29½	{ Mra. P. A. Haslam Can. Pac. Tel.	Agent and operator..	240 00	Oct. 1, 1899	
2	Bamfield Creek	53	{ M. Patterson..	Agent and operator..	240 00	Dec. 1, 1902	
	Cape Beale	4			480 00	May 1, 1900	Proportion of salary for this line.
		36½					

6-7 EDWARD VII., A. 1907

GOVERNMENT TELEGRAPH SERVICE—Continued.

BRITISH COLUMBIA—Continued.

No.	Stations.	Inter- mediate Distance.	Agents, &c.	Positions.	Salaries per Annum.	Date of Appoint- ment.	Memo.
	<i>Alberni-Clayoquot Line.</i>				\$ cts.		
1	Alberni	0	P. A. Haslam ..	Agent and operator..	120 00	Dec. 1, 1902	Proportion for this line.
2	New Alberni	2	E. A. Waterhouse ..	Agent and operator..	Com. 25pc.	Oct. 1, 1903	Line crosses canal at this point by submarine cable.
	<i>Franklin Creek 3 mile cable.</i>	8					
3	Uchucklesit*	10	E. B. Girard	Agent lineman	650 00	Oct. 1, 1902	Section extends from Franklin Creek to Pipestem Inlet, post office address, New Alberni.
4	Uchuelet	10½	{ W. L. Thompson ..	Agent lineman	720 00	Dec. 1, 1902	
5	Clayoquot	66½	{ H. J. Hillier	Lineman	660 00	" 1, 1902	
	Stubbs Island		{ E. S. Reeve	Agent lineman	720 00	" 1, 1902	
	Totals	98½		Accommoda'n office.	2,880 00		Private cable connection for local firm.
	<i>Golden Windermere Line.</i>						
1	Wilmer	0	R. A. Power	Agent and lineman..	780 00	Jan. 1, 1902	Operated from Windermere, Wilmer and Spillimacheen.
2	Athalmer	5	Telephone Connect'n ..	G. C. Pitts		July 1, 1904	" Spillimacheen and Athalmer.
3	Windermere	5	"	Agent and lineman..	900 00	Jan. 1, 1902	Local superintendency.
4	Spillimacheen	16	{ W. F. Dunn	"			Operated from Windermere, Wilmer and Athalmer.
			{ Teleph. Connect'n ..				
5	Golden	66	W. A. Decow	Agent and operator..	300 00	Dec. 1, 1904	Joint agent with C.P. Tel.
	Totals	92			1,980 00		

*Telephone connection between this office and premises of the Nathuint Mining Company.

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—Concluded.
BRITISH COLUMBIA—Concluded.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
	<i>Vancouver—Salt Springs Line.</i>					
1	Duncan Station.	9	E. Castley	Comm'n 25 p.c. July 1, 1905.	July 1, 1905.	
2	Maple Bay	3	T. Aitken	" " " " " 1, 1906.	" " " " " 1, 1906.	
3	Chisholm	04	A. Chisholm	" " " " " 1, 1906.	" " " " " 1, 1906.	
4	Edwards' Store.	3	Edwards & Co.	" " " " " Mar. 1, 1902.	Mar. 1, 1902.	
5	Ganges Harbour	9	E. Purvis	" " " " " July 1, 1905.	July 1, 1905.	
	Totals	24½				

There have been no staff appointments on this line, it being worked by tele phone for the present merely for general convenience, and looked after by the persons directly interested.

6-7 EDWARD VII., A. 1907

GOVERNMENT TELEGRAPH SERVICE.

YUKON LINES.

NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, which includes Port Simpson, Barkerville, Quesnelle and Lillooet branches.

Number.	Stations.	Inter'm'diate Distance.	Positions.	Salaries per Month.	Tariff.	Night Rate.
				\$ cts.		
			C. E. Gooding, manager	60 00		
			H. B. Rochester, operator	42 00		
			C. Belleau, operator	42 00		
1	Ashcroft		M. A. Armstrong, operator	39 00		
			J. D. Fraser, lineman	75 00		
			R. P. Quain, clerk	83 00		
			J. T. Phelan, District Supt.	175 00		
	Cache Creek	4	Accommodation office	50 p. c. com.	25 and 2	25 and 1
2	Bonapart	3 ¹ / ₂	Mrs. Bryson	"	25 " 2	25 " 1
3	Pavillion	36 ¹ / ₂	"	"	50 " 3	25 " 1
4	Lillooet	22	S. A. McFarlane, agt & lineman ..	60 00	50 " 3	25 " 1
5	Clinton	26	E. LeBourdais, opr. and lineman ..	60 00	25 " 2	25 " 1
6	115 Mile House	55	D. M. LeBourdais, "	60 00	25 " 2	25 " 1
7	150 "	35	J. Taylor, operator	90 00	50 " 3	30 " 2
8	Harpers Camp	33	S. H. Patenaud, opr. and lineman ..	60 00	50 " 3	30 " 2
9	Bullion	27				
10	Quesnelle Forks	4	O. Landry, operator and lineman ..	68 66	50 " 3	30 " 2
11	Soda Creek	42	C. H. Smith, "	60 00	50 " 3	30 " 2
12	Alexandria	28	G. A. Broughton "	60 00	50 " 3	30 " 2
13	Quesnelle	26	T. F. Murphy, "	75 00	50 " 3	30 " 2
14	Lafontaine	46	Cariboo Consolidated Co.	50 p. c. com.	50 " 3	
15	Barkerville	15	J. Stone, operator and lineman ..	60 00	50 " 3	
16	Blackwater & Fraser Lake	53	G. Duclos, lineman	70 00		
			J. H. Waller, operator	75 00	75 " 5	
17	Bobtail Lake	45	J. W. Howison, "	75 00	75 " 5	
			W. Smith, lineman	70 00		
18	Stoney Creek	35	W. J. Milne, operator	75 00	75 " 5	
			J. D. Charleson, lineman	70 00		
19	Fraser Lake	35	G. W. Proctor, operator	75 00	75 " 5	
			M. McNevin, lineman	70 00		
20	Burns Lake	69	W. Heinz, operator	75 00		
			J. E. Wise, lineman	70 00	100 " 7	
21	South Bulkley	30	E. Barrett, lineman	70 00	100 " 7	
			J. A. Hodder, operator	75 00		
22	North Bulkley	25				
23	Bulkley Ranch	27	H. N. Boss, operator	75 00	125 " 10	
			H. Fink, lineman	70 00	125 " 10	
24	Morricetown	35				
25	Hazleton	40	G. M. Swan, operator	100 00	125 " 10	
			E. R. Cox, "	100 00		
			E. E. Charleson, line foreman ..	150 00		
			J. C. K. Seeley, lineman	75 00		
			F. Charleson, lineman	70 00		
26	Meanskinisht§	35	E. Tomlinson, operator	50 00	125 " 10	
			R. Tomlinson, lineman	75 00		
27	Skeena Canyon§	47	J. W. Graham, operator	75 00		
			C. Durham, lineman	70 00		
28	Lorne Creek§	24	J. D. McIntosh, operator	75 00		
29	Gravel Yard Point§		W. S. Dobbie, "	75 00	150 " 10	
			A. E. Johnston, lineman	70 00		
30	Telegraph Point§	53	W. J. O'Neill, operator	75 00		
			W. R. Flewin, lineman	70 00	150 " 10	
31	Aberdeen§	4 ¹ / ₂	G. Coutu, operator	75 00		
			R. Donaldson, lineman	70 00		
32	Port Simpson§	39	M. W. O'Neill, operator	50 00		
33	1st Cabin	27	H. A. Cullon, "	75 00		
			Hugh Taylor, lineman	70 00		
34	2nd Cabin	28	G. T. Carpenter, operator	75 00		
			W. Loiselle, lineman	70 00		

* Branch from Ashcroft. † 150 Mile House. ‡ Quesnelle. § Hazleton.

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—Continued.

NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, &c.—Con.

YUKON LINES—Continued.

Number.	Stations.	Interm'diate Distance.	Positions.	Salaries per Month.	Tariff.	Night Rate.
				\$ cts.	\$ cts.	
35	3rd Cabin.....	25	W. J. Tonvie, operator.....	75 00		
36	4th Cabin.....	20	P. Burnell, ".....	75 00		
37	5th Cabin.....	20	E. A. Hawley, ".....	100 00		
			C. Jepson, lineman.....	\$3 per day		
38	6th Cabin.....	20	G. T. Brown, operator.....	100 00		
39	7th Cabin.....	19	T. E. Harkin, ".....	100 00		
40	8th Cabin.....	19	Jas. Mooney, ".....	100 00		
			L. Dubois, lineman.....	\$3 per day		
41	9th Cabin.....	17	J. Muir, operator.....	100 00		
			G. Hill, lineman.....	\$3 per day.		
42	Echo Lake.....	32	F. N. Jackson, operator.....	100 00		
			J. Lowery, lineman.....	\$3 per day.		
43	25-Mile Cabin.....	25	J. H. Murie, operator.....	100 00		
			J. W. Hovey, lineman.....	\$3 per day.		
44	Iskoot.....	16	J. W. Watts, operator.....	100 00	175 " 10	
			W. Warnock, lineman.....	\$3 per day.		
45	Telegraph Creek.....	61	A. S. Gillespie, operator.....	100 00		
			W. S. Simpson, lineman.....	175 00		
			A. J. Charleson, line foreman.....	50 00		
46	Shesley.....	45	W. P. Ball, operator.....	82 50		
			(Geo. E. Adsit, lineman.....	75 00		
47	Nahlin.....	61	S. G. Lawrence, operator.....	82 50	200 " 15	
			R. McKay, lineman.....	75 00		
48	Nakina.....	49	Geo. Coutts, operator.....	82 50		
			J. Haston, lineman.....	75 00		
49	Pike River.....	40	R. J. Barton, lineman & operat.....	82 50		
50	Atlin.....	23	F. W. Dowling, operator.....	116 66		
			A. B. Taylor ".....	100 00		
			D. H. Gagné, line foreman.....	125 00		
51	Center Cabin.....	35			225 " 15	
52	Tagish.....	40	M. Grimes, operator.....	82 50		
			Adam Dickson, lineman.....	75 00		
			Gastin Aish ".....	75 00		
53	Cariboo Crossing.....	18	S. E. Chambers, operator.....	82 50		
54	White Horse.....	65	A. B. Clegg, dist. supt.....	175 00	250 " 15	
			H. Gilchen, store-keeper.....	150 00		
			J. P. Champagne, clerk.....	112 50		
			G. S. Flemming ".....	115 00		
			G. Henderson, lineman.....	75 00		
			Wm. Watson, messenger.....	25 00		
			T. Wakamoto, house kpr & cook.....	75 00		
55	Lower Le Berge.....	59	Douglas Potts, operator.....	82 50		
56	Hootalinqua.....	30	W. Peters, operator.....	82 50		
57	Big Salmon.....	34	H. O. Lokken, lineman.....	75 00		
58	Five Fingers.....		R. O. Freeman, operator.....	82 50		
59	Yukon Crossing.....	8	Aubry Tennant, operator.....	82 50		
			K. Smith, lineman.....	75 00	275 " 75	
60	Fort Selkirk.....	50	Bruce Watson, operator.....	82 50		
61	Selwyn.....	30	R. P. Hall, operator.....	82 50		
			N. Wade, lineman.....	75 00		
62	Stewart River.....	75	Chas. N. Graham, operator.....	82 50		
63	Ogilvie.....	23	J. W. Wilkinson ".....	82 50	300 " 20	
64	Dawson.....	48	W. Brownlow, manager.....	150 00		
			G. A. McLachlin, operator.....	125 00		
			F. A. Hanley, operator.....	125 00		
			R. C. McDonald, clerk.....	100 00		
			H. Douglas, jr., messenger.....	\$3 per day.		
			Mrs. D. Hunt, house kpr & cook.....	100 00		
			Jas. McMenamin, lineman.....	80 00		
			C. A. Couture, line foreman.....	125 00		
65	Forty Mile.....	55	W. H. Mullin, operator.....	82 50		
66	Boundary.....	40			325 "	

6-7 EDWARD VII., A. 1907

GOVERNMENT TELEGRAPH SERVICE—*Concluded.*NAMES employees and monthly salaries &c., Yukon Telegraph Service, &c—*Con.*YUKON LINES—*Concluded.*

Number.	Stations.	Intermediate Distance.	Positions.	Salaries per Month.	Tariff.	Night Rate.
	Vancouver.....		J. Y. Rochester, act. supt.....	\$ cts. 200 00	\$ cts.	
			J. E. Gobeil, genl. inspr.....	166 66		
			J. J. Healy, clerk.....	140 00		
			Emma Hays, stenographer.....	85 00		
		2,252½		8,840 98		
			Add 10 persons \$3 per day as above.....	867 00		
			Total monthly salaries say....	9,707 98		

YUKON TARIFFS.

The rates given above for points north of Quesnelle are one-third less than those primarily adopted, which were calculated on the general basis of 50 cents for 100 miles and 25 cents for each additional 100 miles, counting the distance from Ashcroft.

The local rates between offices north of Quisnelle are calculated on the basis of 50 cents for 100 miles and 25 cents for each additional 100 miles, and the local rates between offices north of Atlin are fixed at 50 cents for each 100 miles.

Cable Messages.—On transatlantic business the word rate is twice as much as the additional word rate given in the list for all points north of Ashcroft—Barkerville, $3 \times 2 = 6c.$; Dawson $20 \times 2 = 40c.$ per word.

On transpacific business the word rate is the additional word rate plus $4c.$; Barkerville, $3 + 4 = 7c.$; Dawson, $20 + 4 = 24c.$ per word to or from Ashcroft.

Press Despatches.—For the Yukon line the rate is 1 cent per word, minimum charge \$1; this applies to the whole line. Exception, Barkerville-Ashcroft section (local) minimum charge 50 cents.

Yukon system connects at Boundary with U.S. Sig. Service Telegraph System.

* Where the tariff rate is entered as 25-1 cents or 50-2, &c., the meaning is that the rate is 25 cents or 50 cents for ten words and 1 cent or 2 cents for each additional word.

GOVERNMENT TELEGRAPH LINES.

SPECIAL TARIFF.

Cable messages.—Rates for cable messages passing over the Yukon line will be found in connection with the Yukon tariff in the preceding pages.

Elsewhere, the rate for transatlantic messages passing over the government lines is the same as for ordinary through messages, excepting where the ordinary tariff is more than 25 cents; in such cases the government line rate is 4 cents per word, with a minimum charge of 25 cents. For example:—

For a message of six words or less the charge is 25 cents for government line.

For a message of seven words the charge is (7×4) 28 cents for government line.

For a message of twelve words the charge is (12×4) 48 cents for government line.

In every case the counting of words includes the address and signature in the same way as for transatlantic cable tolls.

Press despatches.—The rate for press despatches on the government lines (excepting the Yukon line), is 20 cents per 100 words; no single message less than 20 cents.

For the Yukon line the rate is 1 cent per word, minimum charge \$1; this applies to the whole line. Exception, Barkerville-Ashcroft section (local) minimum charge 50 cents.

REGULAR TARIFF.

NOVA SCOTIA.

Line from North Sydney to Meat Cove and Mabou—Local rate, 25-1 (20 offices).*

Big Bras d'Or... Through rate 15-1 from North Sydney, W. U. office.

New Campbellton's (Kelly's

Cove)	"	"	"
Englishtown	"	"	"
Baddeck	"	"	"
Murray	"	"	"
Indian Brook	"	"	"
French River	"	"	"
South Ingonish	"	"	"
Ingonish	"	"	"
Neil's Harbour	"	"	"
Dingwall	"	"	"
Aspy Bay	"	"	"
Meat Cove	"	"	"
Pleasant Bay	"	"	"
Cheticamp	"	"	"
Grand Etang	"	"	"
Northeast Margaree	"	"	"
Margaree Harbour	"	"	"
Southwest Margaree	"	"	"
Inverness Town (Broad Cove)	"	"	"

* When the tariff rate is entered as 25-1 or 50-2, &c., the meaning is that the rate is 25 cents or 50 cents for ten words and 1 cent or 2 cents for each additional word.

6-7 EDWARD VII., A. 1907

Night messages are exchanged with the Western Union Telegraph Company for offices on this line. Rate 1 cent per word with minimum of 15 cents. The local night rate is 1 cent per word with minimum of 25 cents.

Line from Barrington to Cape Sable—Local rate, 12-1.

Newellton.	Through rate 12-1 from Barrington, W. U. Office.
Cape Sable Lighthouse.	“ “ “

This line is now operated by the local telephone company. Terms of lease provide for former telegraph rate as above not being exceeded.

NEW BRUNSWICK.

Line from Chatham to Point Escuminac—Local rate 25-1 (4 offices.)

Bay du Vin	Through rate 15-1 from Chatham, G. N. W. office.
Lower Hardwicke	“ “ “
Escuminac.	“ “ “
Pt. Escuminac Lt. House.	“ “ “

Line from Eastport, Me., to Campobello, Grand Manan, and Whitehead Islands (9 offices)—Local rates between offices on Grand Manan and Whitehead Islands, 15-1; Grand Manan and Campobello Island 25-2; The Islands and Eastport, Me., 25-2, W.U.O.

Welchpool, Campobello	Through rate 25-2 from Eastport, Me., W. U. office.
Flagg's Cove, Grand Manan.	“ “ “
Castalia.	“ “ “
Woodward's Cove	“ “ “
Grand Harbour.	“ “ “
Seal Cove.	“ “ “
Southern Head.	“ “ “
Cheney's Head.	“ “ “
Whitehead Islands.	“ “ “

QUEBEC.

Line from Gaspé to Anticosti Island, Q. (9 offices)—Local rates between offices on the Island 25-1; Gaspé and the Island offices 50-2.

South-West Point.	Through rate 50-2 from Gaspé, G. N. W. office.
Salt Lake.	“ “ “
Shallop Creek	“ “ “
South Point.	“ “ “
Heath Point.	“ “ “
Fox Bay.	“ “ “
Bessie River.	“ “ “
West Point.	“ “ “
English Bay.	“ “ “

SESSIONAL PAPER No. 19

Line from Meat Cove, C.B., N.S., to Magdalen Islands, Q. (9 offices)—Local rates between offices on the Islands 25-1; Meat Cove and the Islands 50-2; offices on the Meat Cove line and the Islands 50-2.

Amherst Island.. . . .	Through rate 50-2 from North Sydney, W. U. office.		
Amherst Lt. House.. . . .	"	"	"
Etang du Nord Village.. . .	"	"	"
Etang du Nord Lt. House..	"	"	"
Cap aux Meules (Grindstone).	"	"	"
House Harbour.. . . .	"	"	"
Grosse Isle.. . . .	"	"	"
Grand Entry.. . . .	"	"	"
South Beach.. . . .	"	"	"
Bryon Island.. . . .	"	"	"

Line from Meat Cove, C.B., N.S., to St. Paul's Island—Local rate between offices on Meat Cove line and St. Paul's 50-2 (1 office).

St. Paul's Island Lt. House 50-2 from North Sydney, N.S., W. U. office.

Line from Quebec to Grosse Isle Quarantine Station (7 offices)—Local rates between offices on Orleans Island and Isle Réaux, 15-1; on Orleans Island, Isle Réaux and Quebec, 15-1; on Orleans Island and Grosse Isle, 25-1; on Isle Réaux and Grosse Isle, 15-1.

St. Pierre, Orleans Island..	Through rate 15-1 from Quebec, G. N. W. office.		
Ste. Pétronille.. . . .	"	"	"
St. Laurent.. . . .	"	"	"
St. Jean.. . . .	"	"	"
St. Famille.. . . .	"	"	"
St. François.. . . .	"	"	"
Isle Réaux.. . . .	"	"	"
Grosse Isle.. . . .	25-1	"	"

Lines in Chicoutimi District, including points west of Bersimis.—Local rate between offices within 100 miles apart, 15-1; over 100 miles, 25-1. Between offices on government line and offices on the G. N. W. Company's line as far as and including Quebec, 25-2. Through rate is the above mentioned local rate between government line offices, to connect with the G. N. W. Tel., plus the full charges of the G. N. W. Tel. Co. for points beyond Quebec.

Line from Bersimis to Chateau Bay, with branch to Anticosti from Long Point of Mingan.—Local rate between offices within 100 miles apart, 15-1; over 100 miles, 25-1; on mainland and Anticosti, 50-2. These same rates apply to government line offices east and west of Bersimis.

The checking of all through business exchanged with the G. N. W. Tel. Co. is done with Quebec.

ONTARIO.

Line from Leamington to Pelee Island (Telephone Circuit)—Local rates between Leamington and Point Pelee 15-1; mainland and Island offices 25-1; offices on the Island 15-1 (8 offices).

Gun Club House, mainland..	15-1 (thro' business) from Leamington, G. N. W.		
Point Pelee mainland.. . . .	"	"	"
Leamington Dock.. . . .	"	"	"
Bairds.. . . .	"	"	"
North Pt. Lt. H'se, Pelee Id.	"	"	"
North Dock, Pelee Island.. .	"	"	"
McIntyre's Corners.. . . .	"	"	"
West Dock, Pelee Island.. .	"	"	"
South Dock.. . . .	"	"	"

6-7 EDWARD VII., A. 1907

NORTHWEST TERRITORIES.

Line from Qu'Appelle (C.P.R. Sta.) to Edmonton, Alberta—Local rates, 15-1, 25-2, 50-3, for distances 10 to 600 miles (13 offices).

Fort Qu'Appelle..	25-2	Qu'Appelle or Saskatoon.
Touchwood..	"	"
Saskatoon..	"	"
Saskatoon (Ts. office C.P.R. Tel.)	"	"
Henrietta..	"	"
Battleford..	"	"
Bressaylor..	25-2	Saskatoon; 50-3 Qu'Appelle or Edmonton.
Onion Lake..	"	"
Moose..	"	"
St. Paul de Métis..	50-3	Saskatoon, Qu'Appelle or Edmonton.
Saddle Lake..	"	"
Victoria..	25-2	Edmonton; 50-3 Qu'Appelle or Saskatoon.
Andrew..	"	"
Star..	"	"
Fort Saskatchewan..	"	"
Edmonton (Transfer office C.P.R. Tel.)..	"	"
Athabasca Landing..	"	"

Line from Moosejaw (C. P. Stn.) to Wood Mountain—Local rates, 25-2 (1 office).
Wood Mountain.. 25-2 from Moosejaw.

BRITISH COLUMBIA.

Line from Victoria to Cape Beale—Local rate, 50-3 (6 offices).

Sooke	50-3	from Victoria C. P. R. Tel. office.
Otter Point..	"	"
Jordan River	"	"
Port San Juan..	"	"
Carmanah Lt. House..	"	"
Cape Beale..	"	"

Line from Nanaimo to Comox—Local rate, 25-2 (9 offices).

Wellington (C.P.R. & E. & N. Ry.)..	25-2	from Nanaimo
Parksville..	"	or Wellington.
Fanny Bay	"	"
Cumberland	"	"
Union Bay	"	"
Union Mines..	"	"
Courtney..	"	"
Comox..	"	"
Alberni (branch)	"	"

Line from Alberni to Cape Beale—Local rate, 50-3.

Between offices on the Victoria-Cape Beale line and the Nanaimo-Comox line, via Alberni 50-3.

Line from Golden to Wildermere—Local rate 25-2 (3 offices).

1. Athalmer	25-2	from Golden (C.P.Ry.)
2. Wilmer	"	"
3. Windermere..	"	"

SESSIONAL PAPER No. 19

Line from Kamloops to Lower Nicola (Telephone) (18 offices).

Connections are leased and lessees allowed commission on messages of non-subscribers. Tariff 25-2 local from Kamloops and for conversations 25 cents for five minutes, half that rate for each additional five minutes or fraction thereof.

Yukon System.

Tariff rates for the Yukon lines are given in the table of staff, &c., in the foregoing pages.

SUMMARY.

Offices on government line, as listed.	327
Offices at transfer points with connecting lines.	16
	<hr/>
Total number embraced by the service.	343

APPENDICES

GOVERNMENT TELEGRAPH SERVICE

ANNUAL REPORT FOR 1905-6.

- Sectional reference**
- (1) Cape Breton lines.
 - (2) Magdalen Island lines.
 - (3) Anticosti Island lines.
 - (4) Bay of Fundy lines.
 - (5) North Shore, St. Lawrence and Chicoutimi.
 - (5a) Quarantine Telegraph system.
 - (5b) Quebec and North Shore St. Lawrence.
 - (6) Pelee Island system.
 - (7) Northwest lines.
 - (8) British Columbia lines
 - (9) Yukon telegraphs.
 - (10) Report of Inspector, Yukon telegraphs.

(SPECIAL REPORT No. 1, CAPE BRETON LINES.)

I beg to report on the government telegraph lines in Cape Breton for the fiscal year to July 31, 1906, as follows:—

	Miles in Operation.	No. of Offices.	No. of Operators.	No. of Reprs and Linemen.
Meat Cove.....	168½	17	17	7
Mabou-Meat Cove.....	109	9	9	11
Boularderie.....	20	3	3	1
N. Sydney-Hawkesbury-Mabou.....	202½	15	15	3
St. Paul.....	3	1	1	.....
	502½	45	45	22

The lines are reported in very fair condition, excepting on the section between Mabou and Cheticamp, where a portion of the poles are found to be in bad condition, but arrangements have been made for renewal, and it is expected the work will be completed before winter sets in.

CONSTRUCTION OF NEW LINES.

A further extension of the Boularderie line, and a line from North Sydney to Eskasoni was completed early this year, and Joseph Logue, North Sydney, was placed in position of general repairer of these new lines, together with the older section between Big Bras d'Or and North Sydney. The new section has not yet been put in operation.

In anticipation of the removal of the cable station from Meat cable to Bay St. Lawrence, and the transfer of the landing place of the St. Paul island cable to a new location, 1½ miles of poles and 7 miles of wire were strung to make the proper connections, but this has not yet been put in operation, pending the completion and transfer of the cable station.

LOCAL REPAIR SECTIONS.

The Cheticamp-Barren section was given up by Mr. M. F. Aucoin, the local line-man, July 1, 1905, and Mr. John G. Chaisson was appointed at a yearly allowance of \$40.

NEW OFFICES AND OFFICE CHANGES.

A new office was opened at Strathlorne, July 7, 1905, with Miss R. McLean in charge as agent-operator at \$50 per annum, or commission; at Meat cove, August 1, Miss M. J. McDonald became operator at \$35 per month, with Miss A. McDonald as assistant at \$30 per month, to cover the service in repeating Magdalen island and St. Paul island business, and between the different sections of the government line as might be necessary. At Cheticamp, Mrs. Maria Fiset, agent-operator resigned August

6-7 EDWARD VII., A. 1907

5, 1905, and was succeeded by C. J. Aucoin, on a commission of 50 per cent of receipts and checks. At Inverness, Mrs. A. McLellan resigned as agent-operator and was succeeded by Miss Agnes A. Gillis, February 21, 1906, on a commission of 50 per cent of receipts and checks.

The special winter tariff of one-half cent per word between the Magdalen Islands and Meat cove was again in force during the winter of 1905-6, while the mail service was suspended.

(Sgd.) D. C. DAWSON,
Supt.

MAGDALEN ISLANDS SYSTEM.

(SEPARATE REPORT No. 2.)

I beg to report as follows on the lines under my charge: The length of the principal line is 85 miles, joined by a loop line at Goose Isle running to Grand Entry 25 miles. A double line of 12 miles with two small cables of $\frac{1}{4}$ mile each crosses to House Harbour. On the main line there is 8 miles of cable on a sand-bar and lagoon for relaying Amherst island to Etang du Nord. On the Amherst Island line there is a double line of about 4 miles and a cable of 10 knots between Grosse Isle and Bryon island, connection with the main line being given at Goose Isle.

Since July 1, 1905, 3 miles of new extension double line has been constructed from Point Bosse to South Beach, 6 miles reconstructed with new poles, and repairs made of damage caused by gales of wind, silver thaws, &c.

The line is built mostly over sand, and is very hard to keep in working order, and requiring the utmost vigilance on the part of the employees. The names of the operators and linemen, with salaries, &c., will be found in the tabulated statement.

A. LEBOURDAIS,
District Superintendent.

GRINDSTONE ISLAND, November 8, 1906.

ANTICOSTI ISLAND SYSTEM.

(SEPARATE REPORT No. 3.)

I beg to submit my report on the line under my control for the year ending June 30, 1906. Total mileage, 230. The wire is in perfect working order throughout, notwithstanding the great difficulty in reaching the location of a break owing to the formation of the trail, repairers having to wade through streams, swamps, and over a muddy beach carrying tools, material and provisions.

During the summer of 1905 the wire between Fox Bay and River Becscie was renewed at a cost of \$1,718.30. The building at Fox Bay was reconstructed in 1905, at a cost of \$672.59.

Repairers refuge camps were reconstructed throughout the length of the line at a cost of \$442.50, and general repairs to the line cost \$144.35. The cost of transporting provisions, painting buildings, boats and canoes, and the purchase of a new boat and some river canoes amounted to \$178.15. The changes in the staff of employees is noted in the tabulated statement elsewhere.

A. MALOUIN,
District Superintendent.

ANTICOSTI, November 3, 1906.

SESSIONAL PAPER No. 19

BAY OF FUNDY, N.B., SYSTEM.

(SEPARATE REPORT No. 4.)

In compliance with your telegram, I am sending the following report of lines in this district for the last fiscal year. The line on Campobello is in good condition, the part from office to Herring Cove being reconstructed in November, 1905, at a cost of \$31.50. On Eastport the wire is getting old, and have instructed the lineman to replace it with new during July, 1906. On Grand Manan the lines are in fair condition. Through 1905 we put in ten new poles and have more on hand to replace defective ones, but the Telephone Company have applied for the use of our poles for their wires, so I decided not to have the annual work done until I knew if they were to use the line, as we would thus save any extra expense to our department. The line would last for years with only our wire, and would cost very little to gradually renew it; but the heavy cross-arms and extra wires of the Telephone Company will make a lot of work necessary.

We had no new line constructed during the year, and all the reconstruction was at Herring Cove, that line having been built in a hurry, when the cable landing was changed from Liberty Point to Herring Cove. On the Eastport line the only extra work was the trenching of the cable from low water to cable hut. The cable hut there is in poor condition and will have to be replaced by a new one, or the old one moved and repaired. The bank caves in under it and parts the cable from the connections.

On Grand Manan there was some extra labour needed in placing new poles, that cost \$19.50, outside of Mr. Gilmour's salary.

The total length of lines is about 46 miles. Length of cable—

	Miles.
From Long Eddy to Herring Cove.	10
Dunn's Beach to Eastport, Me.	1½
Grand Harbour to Rosses Isl.	1½
Rosses Isl. to Cheney's Isl.	½
Cheney's Isl. to White Head.	½
	<hr/> 14½

Land lines—

From Long Eddy to Southern Head.	21
Grand Harbour to White Head.	3½
On Campobello, N.B.	4
Eastport, Maine, U.S.A.	3
	<hr/> 31½

The maintenance accounts for the year are:—

	Maintenance account.	Revenue.
1905.		
July.	\$124 46	\$ 65 21
August.	161 44	76 25
September	195 96	107 30
October.	120 09	106 30
November.	141 30	109 89
December.	349 99	115 91
1906.		
January.	118 24	127 44
February	101 85	98 86
March.	151 15	67 74
April.	107 07	67 85
May.	116 39	72 47
June	143 14	81 31
	<hr/> \$1,831 08	<hr/> \$1,096 53

(Signed)

C. C. SEELEY,

District Superintendent.

GRAND MANAN, N.B., November 2, 1906.

6-7 EDWARD VII., A. 1907

NORTH SHORE LINES, CHICOUTIMI, SAGUENAY AND BERSIMIS.

(SPECIAL REPORT No. 5.)

GOVERNMENT TELEGRAPH SERVICE.

Report of the district superintendent from Quebec to Bersimis, in the counties of Quebec, Montmorency, Charlevoix, Chicoutimi, and part of Saguenay to Bersimis.

The line repairers in the district are divided as follows:—Baie St. Paul to La Cruche, on line No. 40; distance, 38 miles, and from Baie St. Paul to Petite Rivière, line No. 44; distance, 12 miles, making a total distance of 50 miles.

Lineman Michael Fortin, of St. Urbain. Salary, \$270.

From Malbaie to Baie des Rochers, double line, No. 13 and 21; distance, 23 miles, and from Malbaie to Ste. Agnes on line No. 41; distance, 12 miles, making a total of 35 miles.

Lineman A Brassard, of Port au Persil. Salary, including telegraph office, \$410.

From Baie des Rochers to Grandes Bergeronnes, on line No. 13; distance, 27 miles, and from Ste. Catharine to Anse à Cheval, on line No. 39; distance, 15 miles, making a total length of 42 miles.

Lineman G. Bouliane, of Ste. Catharine. Salary, \$360.

From Grandes Bergeronnes to Bersimis, on line No. 13; distance, 75 miles.

Lineman Elliot Courbron, of Portneuf. Salary, \$420.

From La Cruche to Chicoutimi, on line No. 40; distance, 47 miles, and from Chicoutimi to St. Alexis; distance, 15 miles, making a total length of 62 miles.

Lineman J. Fortin, of Chicoutimi. Salary, \$420.

From St. Alexis to Anse à Cheval, on line 39; distance, 53 miles.

Lineman R. Martel, of Anse St. Jean. Salary, including telegraph office, \$272.

From Ste. Anne to LacClair, on line No. 45; distance, 10 miles, and from Ste. Anne to St. Charles Borromée, on line No. 42; distance, 18 miles, making a total length of 28 miles.

Lineman P. Gauthier, of Ste. Anne. Salary, including telegraph office, \$200.

From Ste. Anne to Lac Resimond, on line No. 50; distance, 40 miles.

Lineman Johnny Brisson, of St. Fulgence. Salary, \$360.

From Lac Resimond to Tadousac, on line No. 50; distance, 42 miles.

Lineman Henri Gravel, of Sacré Coeur. Salary, \$360.

Expenses for the maintenance of the line from July, 1905, to June 30, 1906, for operators, and general repairs to the line:—

July, 1905.....	\$ 489 41
August, 1905.....	476 21
September, 1905.....	429 21
October, 1905.....	475 17
November, 1905.....	467 96
December, 1905.....	586 04
January, 1906.....	402 96
February, 1906.....	863 81
March, 1906.....	588 44
April, 1906.....	521 36
May, 1906.....	565 72
June, 1906.....	650 60

\$6,516 69

Other expenses made in connection with the maintenance
of the line..... \$ 748 75

Total amount for maintenance..... \$7,265 44

SESSIONAL PAPER No. 19

The construction of lines were as follows:—

Construction of the line from La Descente des Femmes to Sacré Coeur, which completes the line on the north side of the Saguenay from Chicoutimi to Tadousac.

The construction of this line was authorized by a letter dated July 26, 1906.

The amount expended was \$4,304.54.

The line was not completed and the work was continued under special orders, and the expenditure to be paid in 1906-7.

The amount was paid by special vote, \$2,783.85; total cost of line, \$7,088.39.

An amount of \$1,000 was voted for the construction of a double line between St. Alexis and Chicoutimi. Amount expended, \$872.79.

The construction of a new line was ordered between Tadousac and Bergeronnes on account of the road which was changed. Amount of expenditure, \$977.90.

The amount of \$401.81 was expended in the Ha Ha Bay road.

The sum of \$199.75 was expended near Anse St. Jean for the construction of a small bridge for the use of the lineman.

The amount of \$1,000 was granted for the purchasing of timber for the reconstruction of Les Escoumains bridge, which was burnt, this amount was granted as the government's contribution for the maintenance of the road.

The sum of \$350 was also expended for the construction of a trail road for the line repairers on the west side of Pointe aux Esquimaux.

An amount of \$350 was also expended for the construction of a trail road for line repairers on the east side of Esquimaux Point.

Remarks in the interest of the maintenance of the line in the district:—

It will be advisable to have a store for the supply of the maintenance of the lines, stationery, &c. We have already a store in the shed on the wharf, which ought to be removed to the public building when completed; the present store is a room of 10 x 15 feet.

Before closing these remarks I will call the attention of the department to the fact that there are a great number of telephone lines on the government telegraph posts, viz.:—

On line No. 13, from Malbaie to Baie des Rochers, belongs to M. Lemieux, of Malbaie.

On line No. 40, two telephone lines, from Chicoutimi to St. Alexis. Dubuc Telephone Company and Belley Telephone Company.

On line No. 41, telephone from Malbaie to Ste. Agnes, built by government and operated by M. Lemieux.

On line No. 44, telephone from Baie St. Paul to Petite Rivière St. François, built by the government and operated by a private company.

There is also a cable between Eboulements and Isle aux Coudres, belonging to the government and used for telephone by M. Lemieux, of Malbaie.

CONDITION OF THE LINES.

The lines are generally in good condition, several offices may be improved, and the regulations ought to be printed in French.

GROSSE ISLE QUARANTINE SYSTEM.

(SPECIAL REPORT No. 5a.)

I beg to report on the condition of the lines under my charge, which consist of 35 miles of land line from St. Pierre to the Grosse Isle quarantine station.

Cables—

½ knot from St. Pierre to Ange Gardien.

2 knots from St. François to Isle aux Reaux.

6-7 EDWARD VII., A. 1907

- 2 knots from Isle aux Reaux to Grosse Isle.
- 30 knots from St. François to Baie St. Paul.
- 4 knots from Crane Island to Montmagny, connecting with the Bell Telephone System at Montmagny, and used exclusively for telephone purposes. Connection at Ange Gardien is made with the Great North Western System.

This land line was constructed in 1885, and being built along the south shore of Orleans Island is much exposed to the heavy easterly gales which prevail during the autumn and winter months, and requires constant attention to keep it in working order. A large number of poles are in a state of decay and should be renewed as early as possible next spring, in fact it will be necessary to reconstruct a portion of the line, and give it a general overhauling from Grosse Isle to Ange Gardien. I found the cable defective between Isle aux Reaux and Grosse Isle, and had 800 feet of it removed and replaced by new cable, the work being done by the cable-ship *Tyrian*; four new cable huts were constructed and placed at the various cable landings, and connections made. With the view of facilitating through business between the north shore lines and Quebec via Baie St. Paul and St. François cable, a second wire has been strung from St. François to St. Pierre, which will be used exclusively for this business. On May 1, Miss Masson resigned her position as operator at Grosse Isle and a new office was opened at the house of Miss Legacé, who was appointed operator. Telegraph instruments connecting with the Grosse Isle main line have been installed in the office of Dr. Martineau, chief quarantine physician, and at the Marconi Wireless Station.

The names, salaries and length of service of operators and linemen will be found in tabulated statement elsewhere.

P. POULIOT,
District Superintendent.

ST. JEAN ISLAND OF ORLEANS, October 27, 1906.

QUEBEC AND NORTH SHORE ST. LAWRENCE.—SPECIAL REPORT,

No. 5 B.

QUEBEC, October 5, 1906.

D. H. KEELEY, Esq.,
General Superintendent,
Ottawa, Ont.

DEAR SIR,—I beg to submit a report on the condition of the north shore line from Murray Bay to Pointe aux Esquimaux. Leaving Quebec on June 28, I arrived at Murray Bay on the 29th, and with Frs. Gallienne and Repairer Brassard left there overland on the 30th.

From Murray Bay to Cap à l'Aigle our poles are used by a telephone company and in some places by an electric light company, their wires hamper ours considerably, and expose it at various places to 'crosses,' swinging and otherwise. It is also interfered with by the branches of trees, the cutting of which, Brassard states, Mr. Bonner, the Seigneur of Murray, will not allow. The majority of those trees are on the highway, and the removal of a few branches will not injure them. It may be well to have Mr. Taché communicate with the Seigneur on the subject.

The employees of the electric light company appear to place their wire on the government poles at will. Something should be done to protect our line; in fact their wire should be removed from our poles altogether. There are indications of neglect on the part of the repairer, many sideblocks and insulators being broken, and several poles require renewal from Murray Bay to Baie des Rochers, and I instructed Brassard to place his section in good repair without delay.

SESSIONAL PAPER No. 19

On July 2, we left Baie des Rochers and found the line from there to St. Catharines Bay in very good condition, and evidently well looked after by repairer Boulienne. Between seven and eight miles west of St. Catharines Bay there is a mile of burned timber standing, which is a menace to the line, the roots being partly burned, and decaying rapidly. With the assistance of two men, Boulienne will remove those trees in ten days.

From St. Catharines Bay to the cable landing on the west side of the Saugenay, a distance of about a mile, the wire is covered by a heavy undergrowth which must render it almost unworkable when heavy rains set in, and I suggested to Mr. Taché at Tadousac that the two men referred to be given to Boulienne at once to clear this undergrowth as well as the burnt trees west of St. Catharines Bay. From Tadousac to Bergeronnes the wire runs through a heavy undergrowth, being invisible from the trail at many points, and the new line between those stations, of which about four miles require wiring, should be completed without delay.

From Bergeronnes to Bon Désir there is a little undergrowth to be cleared, otherwise the wire is in good condition. From Bon Désir to Portneuf Repairer Courbron has removed all undergrowth from the wire, but there remains much work to be done clearing undergrowth which in another year will reach the wire; many poles require renewal and the lines in this section should get a thorough overhauling.

From Portneuf the wire runs four miles north, along the west side of the Portneuf river, and the same distance south on the east side. This stretch is in very bad condition, several poles being down, a large number rotten and wire connections made in faulty manner. The location of this piece of line should be changed, and the Portneuf river crossed one-half mile north of the village where the span is not over 1,500 feet, thereby cutting out seven miles of very bad line.

From the Portneuf river east for a distance of three miles, the line has been much damaged by forest fires, poles down, and many of those standing burned almost to the core, the wire (No. 9) also damaged and so brittle that it can be broken as easily as a lath.

This portion of the line should be re-poled and re-wired this season.

From Sault au Cochon to Bersimis the wire is in fairly good condition, a few poles to be renewed and the right of way cleared of undergrowth to the intersection of the loop four miles west of Bersimis. A wooden bridge crossing the River Jean Raymond between Sault au Cochon and the Laval river is in bad repair, the timbers being decayed and liable to go down at any moment; this bridge is forty feet long and can be rebuilt at a cost of \$35 or \$40.

The government camp at Laval river was destroyed by fire last spring, and should be rebuilt. The bridge crossing the Laval River requires repairs to the extent of \$100 and the White river bridge repairs to the extent of \$40.

From Bersimis office to the crossing on west side of the river there is some widening to be done for a distance of half a mile. The crossing at the Bersimis river was damaged by the ice and high water last spring, one of the high poles which was planted on an island being carried away; two new poles were erected here and the crossing much strengthened.

From the east side of crossing to the Indian village (two miles) there is considerable widening to be done, and also from a point two miles east of the Indian village to Rivière des Rosiers, a distance of seven miles; otherwise this section is in good condition. Bridges are required across the Rivers Papinashua, Bartholemi and des Rosiers, which can be constructed of logs at comparatively small cost.

From Rivière des Rosiers east, for a distance of one and a half miles the right of way requires widening, the remainder of the distance to the crossing of the Rivière aux Outardes, nine miles, being completely cleared and in first class order. Seven miles of this section was cleared under the supervision of Mr. Comeau last April.

The 2,200 foot crossing over the Rivière aux Outardes still holds good, notwithstanding the heavy strain of No. 6 wire. A cabin should be built on the west side of

6-7 EDWARD VII., A. 1907

the Rivière aux Outardes at the crossing. Canoes are required at the crossing of the River Bersimis, at the crossing of the Outardes, and at the Petite Rivière, six miles east of Pointe aux Outardes to the Manicouagan mills, the line is well cleared of trees and brush, a few poles require to be replaced, wire should be tightened and many side blocks and insulators (which are damaged) renewed. A cabin is required near the old cable landing at Point Paradis, and one room properly fitted up with stoves, &c., in the old telegraph office east of the cable landing would answer the purpose.

From Manicouagan mills to English Bay the line is well built, but badly damaged by the operations of lumbermen in winter, and requires immediate attention. From English bay to St. Pancras the right of way is cleared about thirty feet, and the wire is in good condition, considering that nothing has been done to keep it up since completed by Mr. Cormier in 1904. The lineman's camp at St. Pancras is in a dilapidated condition but can be repaired at little cost. From St. Pancras to Mistassini, seven and a half miles, the wire runs through a very rough portage, and is in good order; there is much widening to be done and many large trees to be cut out. From Mistassini to the River St. Nicholas the portage is very rough, and much widening required, poles to be renewed and braced, in fact from the River Beesie east for a distance of three and a half miles the wire is strung through the bush without any clearing except a small foot-path, trees being used for poles all the way. This section should be attended to at once to avoid much trouble within the next six months. From St. Nicholas to Godbout the line is in good condition and free from danger of falling trees, Mr. Comeau having cleared this section last May. The appointment of a line repairer to look after the section from the crossing of the Rivière aux Outardes to St. Pancras bay is an absolute necessity, and the repairs already in the service should not have more line to look after than they are capable of doing. A. Brassard has from Murray Bay to Baie des Rochers, thirty-three miles of line, built along the highway, and he can offer no excuse for not keeping it in a high state of efficiency.

G. Boulienne has from Baie des Rochers to Bon Désir, including the Sacré Cœur and St. Etienne branch lines, 73½ miles, but as he can use a horse over the greater part of his section he should be able to keep it up to the proper standard. E. Courbron has from Bon Désir to Bersimis 77½ miles, 38 of which has to be covered on foot, and he is unable to keep this long section in proper repair.

Louis Gagnon has from Bersimis to Point aux Outardes, 26 miles; this section was built in 1905, and is easily kept in repair. From Point aux Outardes to St. Pancras bay there is no line repairer. From St. Pancras bay to St. Nicholas river, 18 miles, Mr. Isaïe Comeau (who lives at Godbout) is the repairer, and from St. Nicholas bay to Godbout the line is looked after by Mr. N. A. Comeau. I beg to suggest that sixteen miles, from Rivière Columbière to Bersimis, be taken from Courbron's section and added to Gagnon's section, which would end at the crossing of the Rivière aux Outardes; this will give Gagnon a total of 36 miles. Another repairer should be appointed to the section from the crossing of the Rivière aux Outardes (east side) to English bay, 49 miles, and Isaïe Comeau from Godbout to English Bay about 35 miles. This change will give Mr. N. A. Comeau more time to attend to the very difficult section from Godbout to Pointe des Monts. No time should be lost in getting work started on the various sections, as the season is well advanced. Three thousand dollars will place the line in first class condition from Portneuf to Godbout, including the cost of wire for damaged section immediately east of Portneuf.

From Godbout to Pointe des Monts, 18½ miles, the wire runs through a heavy undergrowth, a small percentage of which was cleared this season; a complete clearance of this brush should be effected early as possible next season.

From Pointe des Monts to Pointe Esquimaux the wire is in fair condition, but there is much widening of the right of way and clearing of undergrowth to be done between various points on this section next season, and this work should be done by the general repairers at Seven Islands and Pointe aux Esquimaux when on their annual

SESSIONAL PAPER No. 19

repairing trip, with say, ten men each, and on the same repairing trip the various refuge houses for the linemen could be put in order and made habitable.

The crossings at Bersimis, Pointe aux Outardes and Manicouagan rivers, respectively, 1,500, 2,200 and 1,700 feet, were made with No. 6 galvanized iron wire, which should be replaced by No. 10 steel or No. 12 hard drawn copper, to relieve the strain on the poles.

The steel wire for the Bersimis river is already on hand and will be strung early next spring. The automatic repeaters at Bersimis, Longue Pointe and Mutton Bay are not kept in constant use through business as they should be and much time is lost by manual repetition, especially at Bersimis. It may be well to instruct the district superintendents on this point. The intermediate batteries at Pentecost, Thunder River and Pointe aux Esquimaux should be kept in perfect condition, otherwise they impair the efficiency of the wire. The offices, instruments and equipment are in good order. The operators are prompt in the discharge of their duties and the discipline maintained reflects credit on the district superintendent.

I have the honour to be, sir,

Your obedient servant,

M. W. CREAN,

General Inspector.

PELEE ISLAND SYSTEM.

(SPECIAL REPORT No. 6.)

I beg to report as follows on lines under my charge:—

The land lines on Pelee Island, about 12 miles long, are in good shape and good working order.

The cable from Leamington dock to North dock Pelee Island, 17 miles long, is in good repair and working clear and satisfactory.

The line on the mainland, about 12 miles long, is in good working order and repair, but requires new poles to replace a large number that are badly rotted and dangerous to climb, when repairing line. I think that with 150 to 200 new poles this line might be put in good shape for two or three years longer, when additional poles would be required to renew the remaining portion of this part of the system.

The poles used in constructing this part of the system in 1888 were small sapling red cedars that grew on Point Pelee, and they are now badly rotted, especially where they are in clay soil.

In August, 1905, 2½ knots of new cable were received and during the term, from September 16 to October 7, the cable was overhauled from shore to shore and all pieces of old (original) cable were removed and replaced by new cable, thus putting the cable line in first class condition and giving the best of satisfaction until May 4, 1906, when it was damaged during a severe storm by vessel anchors in the channel and other places about 2½ to 3 miles south of the channel; it was during this storm that the barge *Armenia* sank in the channel about a quarter mile east of the cable line.

The damage caused by that storm was repaired during the period from May 15 to June 6, 1906, and the work of repair used up all the first-class cable there was on hand.

I should have at least about half knot of good new cable sent me as soon as convenient for future emergencies, as the old cable which was taken up in October, 1905, is of very doubtful quality, some parts of it being so rotten or spongy that the water oozes through the rubber into the core.

In October, 1905, I had a small shelter built alongside the shore end of the Leamington dock in which we stored the cable we had taken up and in which it is sheltered

6-7 EDWARD VII., A. 1907

from the sun and weather and convenient for use if required. I keep the shelter locked.

Any other telephone supplies that I have on hand are kept in my own office or building in the town so as to be available when required.

I have never charged any rental for storage on my own premises, and I obtained the privilege of erecting the shelter alongside Leamington dock by resolution of the town council, as the spot I selected was controlled by the corporation and no charge was made by the council for such privilege.

I herewith inclose list of officers, operators or agents and commissions or salaries, also nationality and date of birth as far as I can obtain them from the parties or their families.

(Sgd.) JOHN McR. SELKIRK,
District Superintendent.

LEAMINGTON, ONT., October 31, 1906.

NORTHWEST LINES.

(SPECIAL REPORT No. 7.)

Line from Qu'Appelle to Fort Qu'Appelle, 17 miles, is in good working order, but the greater part of it is running through numerous farms and should be moved on to road reserve; estimates for the cost of which have been forwarded to the department. The office at Fort Qu'Appelle is owned by the department, and is in a very dilapidated condition. It is a small frame building erected some twenty-three years ago, and would not repay the cost of repairing.

From Fort Qu'Appelle to Lipton, 11 miles, the first four miles should have every other pole put in new; the next seven miles is in good order. The office at this point is in the Canadian Pacific Railway station and our wire worked by that company.

From Lipton to Touchwood, 38 miles. This portion of the line is in very good order, and I anticipate little or no trouble on it for some time. The office is operated by the Hudson's Bay Company and is in their post.

From Touchwood to Kutawa, 6 miles, the line is also in good order. The office at this point is in Sub-Agent Lindeburgh's house in conjunction with the post office. From Kutawa to South Humboldt, 78 miles, the line runs chiefly through a prairie country and the poles have had a pretty bad scorching with prairie fires. This necessitated the resetting of a great number of poles, some of which are becoming very short and will soon be required to be replaced by new ones. The poles destroyed being mostly cedar, the tamarack being but little affected. The office at South Humboldt is a new building and a very good one; but is in need of painting to keep the lumber from checking and warping, and also eave-troughing to preserve the foundation.

The line from South Humboldt to Saskatoon, 69 miles, also runs through a prairie country, and the same conditions apply as east of South Humboldt. The office in Saskatoon is in the Canadian Pacific Railway Company's building, and our wire is operated by them at this point.

The line from here to Warman, 14 miles, is in first-class condition. At Warman our office is in the Canadian Northern Railway Company's station, and our wire is operated by their people on commission.

From Warman to Henrietta, 38 miles, is a prairie country and has been all burned over this spring without doing any material damage. The line is in good working order. The office at Henrietta is in Sub-agent Salisbury's house.

From this point to Battleford, 57 miles, the line runs through prairie and small timber. The first 35 miles has been nearly all burned over, causing many poles to fall, and weakening many others. The balance of the way to Battleford the line is in good order. The Battleford office, built twenty-four years ago, is falling to pieces, and there is urgent necessity for a new building, for which an appropriation has been asked.

SESSIONAL PAPER No. 19

From Battleford to Bresaylor, 25 miles. Here we have the iron poles, and we have but little trouble on this beat. Our office at this point is in a rented building.

From Bresaylor to Lloydminster, 70 miles. The first 48 miles of this portion of the line is also of iron poles, and we experience little or no trouble on it. The last 22 miles is a loop from the main line, built in the winter time (two years ago), and poplar poles were used. These poles are already decaying, and trouble on this part of the line is constantly occurring. Our office here is owned by the department.

From this point to Onion Lake, 50 miles. The first 22 miles being the loop, the same conditions apply. The next 28 miles is in very good order, except the mast at the crossing of the Saskatchewan river at Old Fort Pitt, 13 miles east of Onion lake. There will have to be a new mast put in this fall, arrangements for which have been completed. The office at Onion Lake is in our own building. It is in good condition; but should be painted to preserve it.

From Onion Lake to Moose, 33 miles. The line is in good order, but runs through a very bad piece of country; being swamps and timber all the way. New roads are constantly being made, which leaves the line isolated and very difficult to follow. The office building here is very old and rotten.

From Moose to St. Paul des Metis, 32 miles. This part of the line runs through swamps, timber and patches of prairie. It has been badly burned this spring by both bush and prairie fires, and has required a good deal of attention. The office at St. Paul des Metis is in the Roman Catholic mission building.

From here to Saddle Lake, 13 miles. The line runs through a similar country, and the same conditions apply as between Moose and St. Paul des Metis. The office building at Saddle Lake is dilapidated and not fit for habitation.

A telephone line from here to Sacred Heart Mission, 6 miles, is in good order.

From Saddle Lake to Victoria, 37 miles, the line runs through scrub timber, sand hills and jack pine. The line is in fairly good order. Our chief trouble on this portion of the line is from trees falling on the wire. At Victoria, the office is in a new building put up by the department this year. This building should be equipped with storm sash and doors.

Line to Andrew, 10 miles. Wire crosses the Saskatchewan river at Victoria, and runs through scrub timber and prairie. This part of the line is in good order. The office at Andrew is in Mr. Carey's store.

A telephone line runs from here to Whitford. It is in good condition, and is working well.

From Andrew to Star, 18 miles. Line is in fairly good order. The office here is in the agent's house.

From Star to Fort Saskatchewan, 25 miles. The first 11 miles was built new, last year and is in first-class order. The next 12 miles is in very bad shape, and should be rebuilt and moved to the highway at once; estimates for the cost of which have been sent to the department. The last 2 miles is also new and in good condition. The office in Fort Saskatchewan is in a rented building and is well situated.

From this point to Edmonton, 18 miles. Line crosses the Saskatchewan river at Fort Saskatchewan and continues on the north side to Edmonton. This portion of the line was built new, two years ago, and is in perfect order. The office is in a rented building and is well situated.

From Edmonton to Athabaska Landing, 98 miles, the line runs through prairie, scrub timber and jack pine. On this section we are bothered with prairie fires and falling timber; but the line has been kept in remarkably good working order, considering the long stretch; interruptions being very rare.

MOOSEJAW SECTION.

From Moosejaw to a point 10 miles south, new poles were erected last fall, for the purpose of taking the line from farms and placing it along the highway, which will be done as soon as the harvest is removed. From this point to Wood Mountain (80 miles), the line is in bad condition. Many of the poles have been in place since the line was

6-7 EDWARD VII., A. 1907

first built, twenty-one years ago. Lightning and prairie fires have contributed, during the past season, to the destruction of many poles. Along a portion of the route cattle are grazing, and these rubbing against the poles invariably push down any that have become weak. Lineman Brown is on the line all the time, and has succeeded in preventing any serious delay to business. We have in stock about 250 poles, and once the money for renewals is available, these will be freighted out and erected. There will be sufficient to make the line safe until next spring, when a thousand new poles should be supplied. Iron poles would be the best for this treeless district, if they could be secured. Water is very scarce along this route after July. There is one interval of 40 miles without water. This, as you will readily understand, makes line building difficult and expensive. An expenditure of \$100 would permit of the digging of a couple of wells, which would largely overcome this difficulty.

From Wood Mountain to Willow Bunch, 40 miles, is new and in excellent condition. The poles being tamarack are not likely to be affected by prairie fires, so that lightning is the only likely cause of trouble for some years to come. The office here is in a new erected building, built by the department last year; but requires two chimneys, the present stovepipes not giving sufficient draught, besides being a source of danger. Storm sashes are also required. An inexpensive fence around the building would also be of advantage.

A large number of settlers have come into the Willow Bunch district during the past two years, so that the extension of the line to that point has proven a great convenience. There is but little change in the Wood Mountain district, and the line there is still used chiefly by the Mounted Police, to whom it is a necessity.

BATOCHÉ SECTION.

The line from Duck Lake to Batoché, 9 miles, is in good working order, as also the telephone line from Duck Lake to the Indian agency, 3 miles.

Having regard to your reference to a depot for the storage of telegraph materials. There is at present nothing of that nature. The establishment of such a depot would greatly facilitate construction work, which in the past has often been greatly delayed because of the delay awaiting supplies. It would enable us to proceed with work immediately upon its being authorized by the department, and would be of great service in the case of trouble caused by lightning, prairie fires and other sources. Qu'Appelle would, I consider, be the best point on our line for such a building, as all supplies would come from the east and could be re-shipped from here with little extra cost. A frame building suitable for the purpose, say 30 x 20, would cost approximately six hundred dollars; a lot on which to erect it—50 feet frontage would cost \$80 to \$100. At present it is much cheaper to build than to rent in any northwest town.

R. C. McDONALD,

District Superintendent.

BRITISH COLUMBIA LINES.

(SPECIAL REPORT No. 8.)

Vancouver Island and Golden-Windermere.

DEPARTMENT OF PUBLIC WORKS OFFICE,

VICTORIA, B.C., October 27, 1906.

SIR,—As per instructions contained in your telegram of the 26th instant, I have the honour to inform you that all of the telegraph and telephone lines under my charge are in fairly good working condition, with the exception of the Victoria and Cape Beale line and the Alberni and Cape Beale line. The former being upon trees

SESSIONAL PAPER No. 19

for the most part and over a most rugged and rough country, is a most difficult line to keep in working condition at all times, but especially in the winter. Since we have placed telephones at various points on the line, we have been able to keep up communication, because the line, although grounded for telegraphing, permits the use of the telephone in a manner.

Herewith inclosed please find an extract from a report, dated August 14, 1903, from Mr. J. G. Brown, my assistant, made after he had taken a trip of inspection over the line, and which I mailed to Mr. Keeley, the General Superintendent, on August 28, 1903. This report shows some of the necessities of the line and the cost thereof.

I have had a portion of the line transferred from the bush to the beach near Carmanah lighthouse for a distance of about a mile. This was absolutely necessary to be done in order to facilitate repairs during the winter months.

The Alberni and Cape Beale line is supposed to be kept in repair by the Canadian Pacific Railway Telegraph Company, who employ two line repairers between Alberni and Bamfield. The portion between Bamfield and Cape Beale is looked after by the government. The line is not well kept up; it is often down for three, four and five days at a time. The last interruption on this wire took place on the 5th instant, and was not working again until the 18th instant. When interruptions occur the operators transmit the messages for Cape Beale by Canadian Pacific Railway cable.

Victoria and Cape Beale Line—118 miles long.

E. Haughton, operator (C.P.R.), Victoria, salary \$20 00

E. Gordon, operator and line repairer, Otter Point, salary 60 00

(An allowance of \$7.50 for horse and rig is made when it is necessary for him to come all the way to Victoria when making repairs to line.)

P. Clark, Otter Point, line repairer, salary \$45 00

E. Clarke, Jordon river, line repairer, salary 45 00

(During the winter months only.)

J. W. Williams, Port Renfrew, line repairer, salary \$45 00

Mrs. E. C. Williams, Port Renfrew, operator, salary 20 00

(Wife of J. W. Williams.)

W. P. Daykin, Carmanah, operator, salary \$20 00

R. S. Daykin, Carmanah, line repairer, salary \$45 00

D. Logan, Clo-oose, line repairer and telephone agent, salary . . . \$45 00

Mrs. M. Paterson, Cape Beale, operator, salary \$10 00

Alberni and Cape Beale Telegraph Line—57 Miles.

Mrs. Paterson, Cape Beale, operator, salary \$20 00

Mrs. Haslam, Alberni, operator, salary 10 00

(Line repairers are in the employ of the C.P.R. Telegraph Company).

Alberni and Clayoquot Line—86½ miles long.

Mrs. Haslam, operator, Alberni, salary \$10 00

A. E. Waterhouse, operator, New Alberni, commission . . . 25 per cent

E. B. Garrard, operator and line repairer, Uchucklesit, salary . . \$60 00

H. J. Hillier, operator and line repairer, Toquart, salary . . . 55 00

W. L. Thompson, operator and line repairer, Ucluelet, salary . . 60 00

E. S. Reeve, operator and line repairer, Clayoquot, salary . . . 60 00

Mr. Garrard's salary previous to January 1, 1906, was \$55. Mr. Hillier was moved from his station at Maggie River to Toquart harbour in order to provide some

6-7 EDWARD VII., A. 1907

one to attend to the telephone installed for the accommodation of the fishery company at Toquart. He has been acting as agent since.

Vancouver Island and Salt Spring Island Telephone Line—26 miles.

E. Castley, telephone agent, Duncans, commission... 25 per cent
 T. Aitken, telephone agent, Maple Bay, commission... 25 per cent
 A. Chisholm, telephone agent, Chisholms, commission... 25 per cent
 R. P. Edwards, telephone agent, Edwards, commission... 25 per cent
 E. Purvis, telephone agent, Ganges, commission... 25 per cent

E. Castley does any line repairs that are necessary between Duncans and Maple Bay. A. Chisholm does the same between Maple Bay and the cable crossing at Sanson Narrows. Mr. R. P. Edwards looks after any repairs between the east end of the cable at Sanson Narrows and Edward's office, while Mr. Purvis does the same between Edward's and Ganges, all of them being paid for the actual work done.

Nanaimo and Comox line... 90 miles long
 Parksville-Alberni branch... 30 miles long

Total length... 120 miles long

W. F. Archibald, agent (C.P.R.), Nanaimo, salary... \$15 50
 A. E. Booth, assistant agent (C.P.R.), Nanaimo, salary... 10 00
 Mrs. Rose Williams, agent, Parksville, salary... 30 00
 Mrs. P. A. Haslam, agent, Alberni, salary... 10 00
 Miss E. Macdonald, agent, Union Bay, salary... 30 00
 Thomas Hudson, line repairer, Union Bay, salary... 65 00

(Keeps in repair about 45 miles.)

Wm. Mills, line repairer, Parksville, salary... 30 00

(Keeps in repair about 20 miles.)

A. H. Peacy, line repairer, Cumberland, salary... 10 00

(Also receives commission of 25 per cent.)

J. McPhee & Son, telephone agents, Courtenay, commission... 25 per cent

Miss L. K. Macdonald, agent, Comox, salary... \$30 00

From Nanaimo to Parksville and Alberni the line is maintained by the C.P.R. Telegraph Company and is kept up well and is in good condition.

Golden, Wilmer and Windermere Combined Telegraph and Telephone Line—90 miles long.

W. A. DeCow, agent (C.P.R.), Golden, salary... \$25 00
 V. F. Dunn, agent and line repairer, Spillimacheen, salary... 75 00
 Miss P. H. McNeill, agent and line repairer, Wilmer, salary... 65 00
 J. C. Pitts, telephone agent, Windermere, commission.

From Golden to Wilmer the line is a combined telegraph and telephone line. From Wilmer to Windermere, via Athelmar, it is a telephone line only. At Wilmer there are three telephones installed in the following places, viz.:—Paradise mine, Gallops and Captain Munn's, running into Wilmer office by special lines of their own and maintained by themselves for which they pay \$2.50 per month each for the connection.

On the main line between Golden and Wilmer there are telephones installed at the following places, viz.:—Golden, Wapta, Hog Ranch, Spillimacheen, Brisco, McMurdo, Sinclair and Wilmer. Between Wilmer and Windermere there are telephones installed at Athelmar and Windermere.

SESSIONAL PAPER No. 19

Mr. Dunn keeps the line in repair from Golden to the 76 Mile Post. Miss McNeill keeps the line in repair from the 76 Mile Post to Wilmer, and from Wilmer to Windermere.

At the time the Golden office was made a commercial office by the Canadian Pacific Railway Telegraph Company and our wire connected thereto, Mr. R. N. Young, who was the agent of the Canadian Pacific Railway, who was also our agent, and Mr. Jas. Wilson, the superintendent of the Canadian Pacific Railway Telegraphs, informed me that the salary (proportion) of Mr. Young would require to be \$40 instead of \$25. Mr. Young was subsequently promoted to be superintendent at Regina, and Mr. DeCow, our present agent, was appointed in his place with the same understanding, but up to the present, Mr. DeCow has not received the promised increase, although having to pay out moneys for assistance.

During the year beginning July 1, 1905, to July 1, 1906, there has practically been no new construction work done on the line under my charge, and with the exception of the changing of the small piece of line from the bush to the beach on the Victoria and Cape Beale line near Carmanah, no reconstruction has been done. All the work done on the lines has been the usual necessary repairs and maintenance.

WM. HENDERSON,
District Superintendent Government Telegraphs.

The following is a table of distances of the various sections of the Victoria and Cape Beale telegraph line as at present in force :

Linemen.	Section.	Miles.
Gordon	Victoria to 4 miles west of Sherringham Point.	40
Goudie	Four miles west of Sherringham Point to Lost Creek.	19
Kirkpatrick ..	Lost Creek to Kowshed River.	20
Rosander	Kowshed to Clo-oose.	15
Logan	Clo-oose to Cape Beale.	24
Five linemen. Total length of line.		118

The following is a suggested rearrangement of the sections :—

Linemen.	Section.	Miles.
Gordon	Victoria to Muir Creek.	32
Goudie	Muir Creek to Jordon River.	14
.....	Jordon River to Sombrio River.	14
.....	Sombrio River to Seven Mile Hut.	14
Rosander	Seven Mile Hut to Carmanah Light House.	13
Logan	Carmanah Light House to two miles east of the Darling River.	15
.....	Two miles east of the Darling River to Cape Beale Light House.	16
Seven linemen. Total length of line.		118

The foregoing would necessitate the appointment of two additional linemen, but would result in the line being kept up in much better condition and would be repaired when breaks occurred so much quicker. Herewith attached please find a statement (summarized) of the cost to make the necessary repairs and changes already referred to, all of which is respectfully submitted.

6-7 EDWARD VII., A. 1907

APPROXIMATE estimate of cost to make the following repairs and changes on the Victoria and Cape Beale Telegraph Line.

Section.		\$	cts.
Goudie's.....	To cutting out logs, brushing out two miles dead timber removed. swampy section made passable all with the assistance of lineman say.....	100	00
.....	To brushing out new trail $\frac{1}{2}$ mile inland to avoid canyons, etc., including the stringing of wire, say.....	200	00
Kirkpatrick's..	To moving line from present position to the Provincial Government Road from Port Renfrew to Botanical station and by the Provincial Government trail to Providence Cove, and brushing out new trail entire distance not already done on road and trail. For labour only.....	300	00
Rosander's.....	To building rough corduroy path 2 feet wide bridging deeper gully's and moving line to the beach for four miles. Say.....	300	00
.....	To supplying and putting up in position new steel cable over the Karliad River 300 feet long. Say.....	70	00
Logans.....	To brushing out the trail and moving wire on to the beach. Say.....	200	00
Kirkpatrick's..	To taking the wire farther up the river San Juan, erecting new high poles and raising the wire over the Gordon River. Say.....	30	00
		1,200	00

(Signed) Wm. HENDERSON.

YUKON TELEGRAPHS—(SPECIAL REPORT No. 9.)

VANCOUVER, B.C., November 16, 1906.

I respectfully submit a report covering the operations of the Ashcroft-Atlin division of the Yukon telegraphs for the year 1905-06.

Main Line, Ashcroft to Atlin, 1,136 Miles.

No new construction was undertaken on the main line during the year; a gang, consisting of two expert linemen, assisted by the regular linemen on their respective sections, covered the line from Quesnel to Ninth Cabin, and from Pike river to Echo lake, putting in new poles where necessary and otherwise doing general repairs. During the months of June, July and August, on account of an exceptionally dry season, the line suffered to a great extent from bush fires which raged throughout the entire northern part of British Columbia. On the Nahlin section north in particular, a fierce bush fire destroyed 130 poles, side blocks and insulators, together with four miles of wire. The half-way Refuge Cabin between Nahlin and Nakina with its contents was also destroyed.

Material was forwarded promptly and the line rebuilt; through communication being restored in three days. The extreme heat retarded the work of the men to some extent.

On the Bob-tail lake, Bulkley ranch, Morricetown, Fourth and Sixth cabin sections, fires caused a considerable number of breaks and destroyed several miles of the line.

During the months of November, December and January in the district between Hazelton and Echo lakes interruptions were more frequent and continued than usual, and were caused by sleet storms and the extraordinary snow fall, which loaded the limbs and, coming as it did before the ground was frozen, uprooted and broke down a great deal of the green timber in the mountain sections where the line follows the side hills.

SESSIONAL PAPER No. 19

causing innumerable breaks. The soft, heavy snow made travel for linemen very slow and difficult.

After the ground became frozen, during the month of February, no interruptions whatever occurred.

Arrangements have been made to send two gangs of axemen into this district next season to fall as much of the menacing timber as is possible, and I feel confident that when this work is completed the line will be reasonably free from interruptions of this character.

Port Simpson Branch.

Hazelton to Port Simpson, with loop of four miles from main line to Aberdeen, 213 miles.

No new construction or reconstruction was done on this line during the year. The ordinary repairs were heavier than usual on account of the bush fires during the months of June, July and August, but while interruptions from this cause were frequent and considerable damage was done, the delay to business was not so great, as the linemen kept in close touch with the cause of trouble and made prompt repairs.

Barkerville Branch.

Quesnel to Barkerville, 61 miles.

Reconstruction of twenty-six and a half miles of this line was started with a gang consisting of a foreman and three linemen. Of this, sixteen and a half miles were rebuilt, but on account of the short season, heavy frost set in preventing further pole setting. The work had to be abandoned for this year. The remaining ten miles will require to be rebuilt next season.

Horse Fly Branch.

One hundred and fifty mile House to Quesnel Forks, 64 miles.

Only ordinary repair work, as occasion required, was done on this line during the year. The line is in good condition.

Lillooet Branch.

Hat Creek to Lillooet, 62 miles. No construction or reconstruction was done on this line. A great many of the poles are decaying and a great many of them had to be reset in the course of ordinary repairs during the year.

Next season it will be necessary to send a gang over this line to reconstruct the greater part of it.

I inclose herewith a comparative revenue statement for this division for the years 1904-05 and 1905-06.

As you will see, the decrease on the main line has been considerable, amounting to \$11,039.17, and is attributed to the same causes as in 1904-05, namely, the loss of Alaska business through the completion and operation of the United States cable and in the diminution of the Yukon population. There is a notable increase in the revenue and messages on the Port Simpson and the Horse Fly branches and in the district between Quesnel and Hazelton, and I look for even better showing in these districts next year.

The business on the Dawson main line will, I believe, also show an increase next year.

I also inclose a list of the offices on the division with the names of those who were employed at each office during the year, length of time they filled such office and the salaries paid them.

With reference to your question as to whether it would be advisable to have a central depot for material and supplies, I would strongly recommend that a depot such as described be established at Vancouver, where a good supply of line material, stationery, &c., be kept on hand to supply the whole system. At present we have a quantity

6-7 EDWARD VII., A. 1907

of material consisting of wire, insulators, &c., stored with the Merchants Cartage Co., for which we pay fifty cents per ton per month. From this stock we have at various times supplied material to Mr. Henderson for the Southern British Columbia lines. We also supply the Atlin-Forty Mile division from this stock.

At Aberdeen we have stored with the British Columbia Canning Co. 537 coils of wire left over from the construction of the Port Simpson branch, for which we pay twenty-five cents per ton per month. This quantity is being gradually reduced by requisitions from the main line, and Port Simpson branch sections being filled from this stock.

At Hazelton we rent a warehouse from R. S. Sargent, for which we pay fifteen dollars per month. It is conveniently located and an emergency supply of provisions and material is stored therein. Across the river from Hazelton, we have a small storehouse, the property of the department, in which we keep an emergency set of repeaters and other line instruments, also a sufficient supply of battery material to duplicate the Hazelton office battery in case of destruction from fire or other causes.

At Quesnel we have rented, at five dollars per month, a storehouse convenient for loading pack trains and transferring across the river, material and supplies for points north of Burns lake. At Telegraph Creek we have an old building on government property, which has been used as a warehouse in the past, but on account of its condition and the damage to supplies from vermin, a storehouse conveniently located near the steamboat landing has been rented from J. F. Callbreath, at the rate of ten dollars per month. It is the intention to have the old building remodelled and repaired and make use of it in place of the one now rented from Callbreath.

We also keep in stock at this point, an emergency supply of provisions and material.

At Ashcroft we keep on hand a stock of stationery, forms, blanks, books, ink, powder, &c., from which we supply all offices on this division, and occasionally supply some to the northern division as well. We pay no extra rent for the use of the room in which we store these goods, it being included in the rent of the Ashcroft office, but on account of the limited space at our disposal, and the inconvenience in shipping to points north of Hazelton, we cannot keep as large a supply as the service demands, and a larger depot situated in Vancouver would much better suit the requirements of the service.

I am inclosing herewith a list of the employees at present in the service, giving names, location, occupation, year of birth, place of birth, and in case of those born in foreign countries, the year in which they became naturalized British subjects. I will follow this immediately with a pay-sheet giving the same information, but including thereon the present salaries paid to all, the names of those receiving allowances, together with the amount.

I am also inclosing a report showing the cost of repairs, ordinary and general, for the main line, and repairs and reconstruction for the branches Ashcroft-Atlin division, 1905-6.

J. T. PHELAN,
Acting Superintendent.

SESSIONAL PAPER No. 19

YUKON TELEGRAPHS—MAIN LINE—ASHCROFT-ATLIN DIV.

REPORT SHOWING COST OF REPAIRS, ORDINARY AND GENERAL, MAIN LINE AND BRANCHES,
1905-6.

ASHCROFT TO QUESNEL.

(Ordinary Repairs).

Ashcroft office, labour, horse-hire, meals, &c..	\$	86	25
Bonaparte office, labour, horse-hire, meals, &c..		10	50
Clinton office, labour, horse-hire, meals, &c..		104	25
115 M. House office, labour, horse-hire, meals, &c.		163	00
150 M. House office, labour, horse-hire, meals, &c.		154	25
Soda Creek office, labour, horse-hire, meals, &c.		17	00
Alexandria office, labour, horse-hire, meals, &c.		44	75
Quesnel office, labour, horse-hire, meals, &c...		48	50
	\$	628	50

QUESNEL TO 9TH CABIN.

(General Repairs).

Labour, svcs. two men, totalling 133 days, at \$3..	\$	399	00
Horse-hire..		379	50
	\$	778	50

ECHO LAKE TO PIKE RIVER.

(General Repairs.)

Labour: 213 days, at \$3; 54 days, at \$2.50...	\$	774	00
Horse-hire, \$218; svcs. packer, \$57..		275	00
Supplies, provisions, &c..		186	56
	\$	1,235	56

NOTE.—\$422.55 of the above chargeable to repairs made necessary by bush fires, Nakina section.

Pike river section—Assistance to lineman on repairs..		14	00
Repairs to trail and bridges, Quesnel to 9th Cabin..	\$	1,000	00
Repairs to trail and bridges, Echo lake-Pike river..		1,000	00
	\$	2,000	00

Total cost, main line, Ashcroft to Pike river.. ..\$ 4,656 56

All branch lines.

Lillooet branch—

Lillooet office, line expenses	\$	5	00
Pavillion office, labour, &c..		133	25
	\$	138	25

Horsefly branch—

Harper's camp			
Bullion, labour, &c..	\$	7	00
Quesnel Forks..			
		7	00

6-7 EDWARD VII., A. 1907

Barkerville branch—

Lafontaine, labour and horse hire, ordinary repairs.....	\$ 16 00
Barkerville, labour and horse hire, ordinary repairs.....	21 00
Special general repairs, labour and horse hire..	696 20

733 20**Port Simpson branch—**

Meanskinisht, extra labour, \$5; transportation, \$5.....	10 00
Lorne Creek, extra labour, \$342; transportation, \$19.50.....	361 50
Skeena canyon, extra labour, \$195; transportation, \$51.....	246 00
Graveyard Pt., transportation on line rep....	71 25
Telegraph Point, transportation on line rep....	26 50
Aberdeen.....	.....
Port Simpson, launch hire, provisions, &c....	578 07

1,293 32Total cost repairs, all branches... .. \$2,171 77**SUMMARY.**

All repairs to main line, Ashcroft to Pike river... ..	\$2,656 56
Repairs trail and bridges, Quesnel to Pike river... ..	2,000 00
Branch lines, ordinary and general repairs... ..	2,171 77

Total... .. \$6,828 33**ATLIN BOUNDARY DIVISION.**

Owing to the opening up of the Conrad Consolidated mines at Conrad during the month of September, 1905, it was deemed advisable to build a loop line to Conrad from Nare's lake, thus giving connection with Carcross, Atlin, Tagish, Boundary and Ashcroft. The revenue derived from that line while on the commission basis, is very satisfactory and those interested in the mining industries of Conrad as well as the merchants and general public appreciate very much the convenience of having direct communication with the outside world.

The business at Carcross has increased to such an extent, owing to its being in the immediate vicinity of Conrad that it was found necessary to build a more suitable office than the present one and in closer proximity to the railway station and town, and having the consent of the department to do so, the building is now under construction, and will be completed this month. The present telegraph office at Fort Selkirk is situated about half a mile from the steamboat landing which is very inconvenient for the travelling public, especially during the summer season, and with the view of bettering the condition of things at that point I have made application to the Crown timber and land agent at Dawson for a plot of land on the government reserve which is about one hundred yards from the steamboat landing to be used for the purpose of building a telegraph office. The material for this building will be of logs taken from the old buildings formerly occupied by the Yukon police force, permission for which was granted by the Minister of Militia to the Inspector of the Yukon telegraphs, Mr. J. E. Gobeil. White Horse is, and always has been since the completion of the line from Atlin south to Ashcroft in 1901, the distribution point of the Atlin Forty Mile division of telegraph materials, provisions, stationery, instruments, &c. We have a very

SESSIONAL PAPER No. 19

suitable warehouse 30 x 60 built in 1901 by Mr. J. C. Tache, and since then turned over to the telegraph service, this building is within fifty yards of the telegraph office; there is also a small warehouse at Dawson, the property of the Department of Public Works, which is used for storing a complete duplicate outfit of battery and line material. Atlin is also provided with a small building and used for the same purpose, but for this building we pay a rental of \$5 per month, and this is the only building for which we pay the rental.

Owing to the washing away of the bank at Ogilvie crossing, where our wire spans the Yukon river, it was found necessary to put up a new pole 150 feet farther back than the one placed there in 1899, increasing the span from 1,250 feet to 1,400 feet, the longest span of wire from pole to pole in this part of Canada.

The line from Atlin to Boundary was thoroughly gone over last summer by the individual linemen, and the result of their labours has given such satisfaction that we are entirely free from interruptions.

H. GILCHEN,

District Superintendent.

WHITE HORSE, November 1, 1906.

(SPECIAL REPORT No. 10.)

OFFICE OF THE INSPECTOR YUKON TELEGRAPHS,

OTTAWA, April 4, 1906.

D. H. KEELEY, Esq.,

General Superintendent, Government Telegraph Service,
Department of Public Works,
Ottawa.

SIR,—In accordance with your instructions of May 9, 1905, I beg to inform you that I proceeded at once on a trip of inspection over the Dominion government's Yukon telegraphs, beginning at Ashcroft, the southern terminus, where connection is made with the C.P.R. telegraph system, and I now have the honour to report as follows:—

I will first give a short history of that part of the telegraph lines in British Columbia of which the government became possessed, from their inception to date, and which now form part of the Yukon system, leaving entirely out of consideration the other lines in British Columbia, which are not connected with that system.

Owing to a break in the Atlantic cable, on September 3, 1858, it was decided to construct a telegraph line from Washington Territory to Behring straits, thence through a short cable to connect with a land line through Siberia, and connect with the telegraph systems of Europe.

In 1864, the Western Union Telegraph Company constructed a line from Swinomish, Washington Territory, to New Westminster, and in 1865 the line was extended to Quesnel, in Cariboo.

In 1866, the line was continued northeasterly to a point 50 miles north of Fort Stager, on the River Kispyox, a tributary of the River Skeena.

On the successful establishment of the second Atlantic cable, in June, 1866, the project was abandoned. The length from Quesnel mouth to the Kispyox, about 350 miles, was entirely destroyed and hardly a trace of it remained in 1872.

In July, 1868, Barkerville, in Cariboo, was connected with the main line.

On February 11, 1871, a perpetual lease of the line and appointments was granted by the company to the government of British Columbia.

One of the terms agreed to as a basis for the political union of British Columbia with Canada was to defray the expenses of the postal and telegraph service, and accordingly on July 20, 1871, date of the admission of the province, the telegraph lines were assumed by the Dominion government.

6-7 EDWARD VII., A. 1907

On September 27, 1880, the line from Matsqui to Quesnel, 399 miles, was acquired from the Western Union Telegraph Company (being part of the 450 miles of land lines and 16 miles of cable for which the government paid \$24,000).

After 1880, date of purchase, the government reconstructed the line from Quesnel to Barkerville, 60 miles.

In 1887 arrangements were made with the C.P.R. Telegraph Company to operate the lines between Ashcroft and Barkerville on a percentage basis; and in 1890 the Ashcroft-Barkerville line was re-poled.

In 1899 arrangements were made to construct a through line to the Yukon, using the portion of line already built between Ashcroft and Quesnel, and work was commenced on March 28, 1900.

In 1900, the Ashcroft-Quesnel line was again re-poled throughout, a new wire being strung thereon for through Dawson business, and the old wire used for local work.

In 1901 the management of the lines which heretofore had been in the hands of the Canadian Pacific Railway Company, was resumed by the government, and since then the whole has been operated as a continuous system, by the Department of Public Works.

Having given a succinct history of what is now known as the Yukon system, I will proceed to refer more extensively to each section of the system from Ashcroft northward, giving details concerning the physical features of the country traversed by the line, the number and location of stations, the number of men employed, &c.

ASHCROFT TO QUESNEL.

Ashcroft.—Is situated on the Thompson river, 2,585 miles west of Ottawa, 203 miles east of Vancouver. It is on the main line of the Canadian Pacific Railway, has a population of 500. It is a busy town, being the point of departure for the Cariboo and Omenica gold fields in the northern interior of British Columbia. There are extensive cattle ranges in the vicinity and considerable farming is done. Ashcroft being the southern terminus of the Yukon system and the junction point with the Canadian Pacific Railway Telegraph line, the advantages derived from having this office operated jointly by the government and the Canadian Pacific telegraph are obvious, as business is interchanged with more despatch and convenience. The cost of the actual operation of this office is borne jointly by the government and the Canadian Pacific Railway, the former paying 60 per cent and the latter 40 per cent; the clerical force, the district superintendent and managers' salaries are paid in full by the department. On the attached statement is shown in detail the average yearly cost to the department of maintaining this office as is at present done, that is under separate departments, that of the district superintendents and the operating staff, which amounts to \$4,255.50 per year for the former and \$2,932.07 for the latter, or a total of \$7,187.57. If Ashcroft were made the headquarters of the Yukon telegraphs, through which the terminal business of the line would be done, both as regards the actual operating of the line and interchange of official business with the department, there is hardly any doubt that the total cost would not amount to more than \$7,000 per year with the following staff:—

Manager, say	\$2,000 00
Bookkeeper, say	1,500 00
Clerk, say	1,200 00
Two first-class operators	2,400 00
Lineman	720 00
	<hr/>
	\$7,820 00
Less 40 per cent operators' salaries	960 00
	<hr/>
	<u>\$6,860 00</u>

SESSIONAL PAPER No. 19

Three wires issue from this office classed as follows:—

No. 1.—Cariboo line, handling local business between Ashcroft and Barkerville.

2.—Dawson through wire.

3.—Lillooet line which branches off at Hat Creek.

A battery is installed at Ashcroft, being composed of the common glass jars, blue-stone, coppers and zincs, connected together and generating the necessary current to operate the line. This is known as the Daniell cell.

Clinton.—33½ miles from Ashcroft. Clinton is situated at the point at which the Lillooet and Big Bar roads leave the main wagon road. It has telegraph and express offices, two hotels and four stores. Population, 150. Mrs. LeBourdais is operator at this office at a salary of \$60 per month. The department also pays \$5 per month for office rent.

Foot of Lake La Hache.—102 miles from Ashcroft. D. LeBourdais is operator at this office at a salary of \$60 per month. This station is simply a stopping place on the road where travellers and teamsters may obtain meals and shelter for the night.

150 mile house.—138 miles from Ashcroft. Wm. Hall is operator here at a salary of \$60 per month. The department also pays \$5 per month office rent.

Soda Creek.—16½ miles from Ashcroft. Soda Creek is a post town, at the confluence of the creek of that name and the Fraser river, and is the first point of contact the line has with the Fraser. It contains two stores, two hotels, one flour mill, telegraph and express offices. Population, 75. C. H. Smith is operator at \$60 per month. \$5 per month is also paid for office rent.

Alexandria.—187½ miles from Ashcroft.

Alexandria, on the Fraser river, is also a post settlement in Cariboo district, B.C. It contains a church, two stores, and two hotels. Population, 40. H. A. Broughton is operator here, at \$60 per month.

Quesnel.—220½ miles from Ashcroft.

Quesnel is situated at the confluence of the Fraser river and Quesnel river, and is in latitude 55° north, and is about 1,500 ft. above the sea. It has a population of 250 and is the point of departure for the unsettled northern interior of British Columbia. T. F. Murphy is operator and lineman at \$75 per month. The line from Ashcroft to Quesnel is in first-class condition, and interruptions are of very rare occurrence. It is operated as cheaply as possible under the present method. There are 5,126 poles from Ashcroft to Quesnel, or twenty-four poles to the mile, they are mostly of unpeeled fir. The construction along this section was very easy, owing to facility of transportation and the procuring of the necessary poles.

Country Between Ashcroft and Quesnel.—The country from Ashcroft to the Bonaparte is generally open with rolling hills, fairly well supplied with water. From the Bonaparte to the vicinity of the 70-Mile House, the line runs through what is called the 'green timber,' and is a country very dreary and valueless for agricultural purposes. Much of the land is impregnated with alkali and is of a stony character. Descending towards and about Lake La Hache there is a decided change for the better, the valley being well suited for dairying. Cattle are produced in large quantities. Timber is plentiful everywhere.

Most of the ranches from Soda Creek to Quesnel are on the eastern side of the river, on the Cariboo wagon road. Some of them are very fine.

All the points mentioned above are on the Cariboo wagon road, and are connected by stage tri-weekly with Ashcroft.

The total distance from Ashcroft to Quesnel is 220½ miles.

Quesnel to Hazelton.—As stated above, there is an operator at Quesnel who also performs the duties of lineman, at a salary of \$75 per month. There is also a small battery at this office.

Quesnel to Blackwater, 42 Miles.—The line follows the east bank of the Fraser river to a point about two miles north of Quesnel, where it crosses. The country about Quesnel on both sides of the river has been burnt over, and the original forest, which was Douglas fir, destroyed. In its stead poplar, beech and willows have grown up. The burnt lands extend five miles or so from Quesnel, after which the telegraph line enters the green timber, which consists of Douglas fir, white spruce, balsam, aspens and poplars.

Eleven miles north of Quesnel, we reach the first refuge house. It is a log shanty 11 x 11 feet, 6 feet high at one end and 5 feet at the other. It is now closed owing to Indians and others taking away the provisions left there.

Sixteen miles farther north we come to another refuge house; same description as above.

Fifteen miles farther we reach Blackwater office, situated on the bank of the Blackwater river, a very turbulent stream running between high rocky walls and crossed over by a wooden bridge built by the provincial government.

On leaving the river bank opposite Quesnel the line gradually ascends over broken ground. When on top an irregularly hilly and rolling country stretches northward and westward.

J. H. Waller is operator at this place, at \$75 per month.

J. McNeill, lineman, \$70 per month.

The provisions for this cabin are purchased in Vancouver, and this office is the first on the circuit where provisions are packed from the south, by Barrett & Co., a firm of packers having their headquarters at Hazelton, B.C.

After the line leaves the green timber, about eighteen miles from Quesnel, it passes through a forest of black pine to Blackwater. The country is gently undulating, and the actual work of construction must have been easy. This section of the line is in good shape.

Blackwater to Bobtail Lake, 37 Miles.

J. W. Howison is operator and lineman at Bobtail lake. Salary, \$75 per month.

There is a refuge house 19 miles north from Blackwater and eighteen miles south from Bobtail lake at Deep Creek; same description as others. This section of the line is in first-class condition.

Provisions are also packed to this office by the same people.

Bobtail Lake to Stoney Creek, 32 Miles.

Twelve miles north from Bobtail Lake and twenty south from Stoney Creek another refuge house is reached. Same description as others. The telegraph office was originally built about two miles from any water and subsequently the operator had to build a cabin for himself on the shore of the lake. Thus far the construction of the line has been very easy with quantities of timber for poles and through a gently rolling country.

W. J. Milne is operator at this office. Salary, \$75 per month.

J. D. Charleson, lineman, at \$70 per month.

Supplies are also packed to this office by Bennett & Co.

Stoney Creek to Fraser Lake, 21 Miles.

Eleven miles from Stoney Creek we reach a refuge house of same description as others passed by.

The line crosses the Nechaco river about one and one-half miles southeast from Fraser Lake office.

The Nechaco is a noble stream, wide, deep and with a strong current. The country in the vicinity of the Nechaco is generally level, but gently undulating and more fertile in appearance than any land before seen on the line of route followed. Open groves and scattered clumps of poplar with occasional areas of thicker woods formed of scrub

SESSIONAL PAPER No. 19

pine alternating with meadows of open land, covered with grass and pea vine, are seen, this latter being considered only second to bunch grass in nutritive quality.

The country about Fort Fraser is rather bold and broken, though at some places there are patches of flat terrace country suitable for agriculture.

G. W. Proctor is operator at Fraser lake. Salary, \$75 per month.

M. McNevin, lineman, \$70 per month.

These officials board with the Hudson Bay Company's agent, Mr. Peters; \$30 per month being paid for each. Five dollars per month rent is also paid for office rent to the Hudson Bay Company.

Fraser Lake to Burns Lake, 55 Miles.

There are three refuge houses between Fort Fraser and Burn's Lake, one 15 miles from Fort Fraser, another 17 miles farther and another 13 miles from the latter. These refuge houses are all of the same description.

Between these two points the country is still generally level or but gently undulating. There are numbers of small lakes abounding with fish, and though the soil is almost always light there are several stretches of good land. Cottonwood becomes very plentiful.

William Heinz is operator at Burn's Lake. Salary, \$75 per month.

B. Lashbrook, lineman, \$70 per month.

Provisions are packed to this office by the same firm.

The line between Fraser Lake and Burn's Lake is in first-class condition and well cared for.

Burn's Lake to South Bulkley, 27 Miles.

A refuge house is reached 14 miles north of Burn's Lake and about 8 miles farther the line crosses the summit and descends the South Bulkley, the first office in the (now well known in the west) Bulkley valley. Poles are rather of a poorer quality on this stretch, otherwise the line is in good shape.

L. Broughton is operator at South Bulkley. Salary, \$75 per month.

E. Barrett, lineman, \$70 per month.

Provisions are packed to this office by the same firm, from Hazelton.

South Bulkley to Tyee Lake, 52 Miles.

North Bulkley, seventeen miles from South Bulkley, is an abandoned office on the west bank of the Bulkley river, although there is an instrument in a ranch house near by. The refuge house between North and South Bulkley is also abandoned. The country between these two points is much rougher. Twelve miles north of North Bulkley a piece of land called government ranch is reached. On this ranch, by the lake side, is a building, the property of the government. About six miles north of the Government ranch we reach Bulkley ranch, which was formerly a telegraph office, but is now used as a refuge house. The telegraph instrument has been moved north fourteen miles on the shores of a lake locally known as Tyee lake, but charted as McLure lake. This section of the line is not in as good condition as that inspected before, cottonwood trees have been used for poles when better material could have been procured with little more labour. From North Bulkley the line runs through the Bulkley valley to Hazelton, a beautiful stretch of undulating land well suited for agricultural purposes; the finest of grazing is found in this valley. The land has been almost all taken up in this valley owing to the rumour that the Grand Trunk Pacific was to be located along its entire length. There is an operator at Tyee lake at \$75 per month, also a lineman at \$70 per month. Provisions are packed to this cabin from Hazelton by the same firm of packers.

Tyee Lake to Hazelton, 50 Miles.

The line follows the east bank of the Bulkley river to Morricetown, twenty-two miles away, where it crosses to the west shore crossing again to the east shore about

6-7 EDWARD VII., A. 1907

three miles from Hazelton; then on to Hazelton. When the line was constructed from Hazelton southwards there were two trails, one called the Hagglegate 'cut-off' and the old telegraph trail. For some reason the old telegraph trail was chosen, although it is much rougher and some 10 to 12 miles longer. This section of the line is not in very good shape owing to the number of cottonwood trees used for poles.

The following are the charges against maintenance at Hazelton office :—

	Salary per year.	Board Allowance.	
E. E. Charleson, line foreman.. . . .	\$1,800 00	\$365 00	\$2,165 00
G. W. Swan, manager and operator.. . . .	1,200 00	365 00	1,565 00
E. R. Cox, night operator.. . . .	1,200 00	365 00	1,565 00
J. C. K. Sealy, lineman.. . . .	900 00	365 00	1,265 00
T. Charleson.. . . .	840 00	365 00	1,205 00
Rent, 12 months for office, warehouse and dwelling at \$40.. . . .			480 00
Sundries.. . . .			23 15
			<hr/>
			\$8,268 15

Hazelton is a relay office. This was necessary owing to the length of the line between Hazelton and Ashcroft and Hazelton and Atlin.

Refuge Houses.

The refuge houses and telegraph offices built along the line have all proven totally inadequate to meet the requirements. Most of them had no windows; some were at great distances from water, others were simply dug-outs, and the result was that the men had to help each other in erecting new buildings or extensions to the old ones. Most of the cabins originally put up are now used as store houses or are altogether abandoned.

POLES.

Quesnel to Hazelton.

	Planted.	Trees.	Total.
Quesnel to Blackwater.. . . .	855	360	1,215
Blackwater to Bobtail lake.. . . .	896	237	1,133
Bobtail lake to Stoney creek.. . . .	1,023	279	1,302
Stoney creek to Fraser lake.. . . .	652	94	746
Fraser lake to Burn's lake.. . . .	1,440	116	1,556
Burn's lake to South Bulkley.. . . .	723	4	727
South Bulkley to North Bulkley.. . . .	440	16	456
North Bulkley to Bulkley ranch.. . . .	700	7	707
Bulkley ranch to Tyee lake.. . . .	336	10	346
Tyee lake to Hazelton.. . . .	757	30	787
	<hr/>	<hr/>	<hr/>
	7,822	1,153	8,975

These poles are all unpeeled fir, Jack pine or black pine, and as the line nears Hazelton a great many of cottonwood are to be found.

Accompanying this report will be found a map (not published) showing part of the Yukon Telegraph line with branches, Ashcroft to Hazelton. The distances given are along the telegraph line. Map also shows timber along same.

6-7 EDWARD VII., A. 1907

PROVISIONS.

The provisions for the cabins along the route are bought in Vancouver from Messrs. Kelly, Douglas & Co.

MODE OF TRANSPORTATION.

Part of the provisions are sent to Ashcroft by rail, then by wagon to Quesnel, where they are loaded on pack animals and distributed along the route.

The other part is sent to Port Essington by ocean steamer from Vancouver, then by river steamers to Hazelton, where they are turned over to packers.

PACKING RATES.

Twenty cents per pound for provisions and seventeen and a half cents for line material is paid by the department for packing from Quesnel north and Hazelton south to Barrett & Co., of Hazelton, B.C.

Owing to a severe accident the inspector was obliged to abandon the actual inspection of the line for the season.

I have the honour to be, sir,

Your obedient servant

J. E. GOBEIL,

Inspector of Yukon Telegraphs.

PART VI

REPORT OF THE COLLECTOR OF REVENUE

DEPARTMENT OF PUBLIC WORKS

1905-1906

F. GÉLINAS, Esq.,
Secretary,

OTTAWA, September 18, 1906.

Department of Public Works, Ottawa.

SIR,—I have the honour of submitting my report for the year ended 30th June, 1906.

I have examined the books and accounts of all the officers under my control, and it is my pleasant duty to state that in all cases, the rules laid down by the Department for their guidance, have been carefully observed by these officers, who have faithfully accounted for all revenue collected.

During the fiscal year just closed the revenue accrued from public works shows an increase of \$12,895.19, being \$124,854.96, while for the previous year it was \$111,959.77.

The collections also show a greater increase of \$17,690.61, being \$129,621.88, while in the preceding year they amounted to \$111,931.27.

The revenue accrued from slides and booms was \$76,444.29 or \$6,429.68 less than in 1904-5. The collections were \$81,211.21 or \$1,662.76 less than the previous year.

The outstanding uncollected revenue was reduced by \$4,766.92.

The graving docks yielded \$44,067.67 or \$19,313.37 more than in 1904-5.

Rents amounted to \$4,343 or \$11.50 more than preceding year.

Having dealt with the revenue in a general way, I beg to submit the particulars in detail relative to the several services under their respective heads.

SLIDES AND BOOMS.

OTTAWA DISTRICT.

The tolls charged up amounted to \$37,947.69; \$6,704.84 less than in 1904-5.

The number of saw-logs that passed through the works was 4,497,130 or 92,455 more than the previous year.

It may seem strange that the dues should be less this year than last while the number of saw-logs is greater, but this is attributable to a great falling off in the tolls from the Petewawe and a larger number of logs passing through works where the tolls are small compared with those on that river. I may say here, that the tolls on the logs stuck in the Petewawe last year would amount to more than the shortage in the Ottawa revenue.

Of square timber there was only 545 pieces, being 2,827 pieces less than in 1904-5.

All the revenue accrued in this district during the year just closed was collected.

Of the dues accrued since 1st July, 1889, when this Department took over the collection, there remains uncollected \$8,145.35, full particulars of which will be found in statement No. 2 herewith.

Of the dues accrued since 1st July, 1889, there still remains \$56,805.65—all of which should be written off. See statements Nos. 1 and 3 herewith, for particulars.

The accounts for the Ottawa district stand thus:—

Dues accrued during the year 1905-6, \$37,947.69; all collected.

Amount outstanding—

Dues accrued prior to the collection being transferred to
this department, July 1, 1889. \$56,805 65

Dues of 1889-90.	\$6,908 05
" 1890-1.	28 42
" 1892-3.	379 80
" 1896-7.	196 71
" 1903-4.	637 37
	<hr/>
	8,145 35

6-7 EDWARD VII., A. 1907

I would again call attention to the fact that since this department assumed the collection of these dues, of the amount accrued, viz.: \$878,457.16, all but \$28.42 absolutely owing to the department has been collected. The remainder above shown as uncollected, in all \$8,116.93, being composed of Chaudière boomage, \$6,903.05, which should have been written off long ago, and the balance being covered by counter claims, which, if my information with regard to them be correct, ought to be allowed, except perhaps the item of 1903-4.

The increases and decreases from the different works as compared with 1904-5 were as follows:—

Increases.—Cheneaux boom, \$483.39; Coulonge, \$1,488.42; Gatineau, \$468.23.

Decreases.—Main Ottawa, \$45.53; Petewawe, \$7,459.32; Madawaska, \$627.79; Dumoine, \$659.68; and Black river, \$352.06.

The smaller revenues of late years compared with that in which the present tariff came into force is partly attributable to the almost entire extinction of the square timber trade and mostly to the great proportion of small logs, formerly left in the woods but now brought down, and I may say here that the constant decrease in the diameter of the logs brought down accounts to a great extent for the fact that though the number of pieces may increase, yet the revenue does not show a corresponding increment.

Again, as the small spruce is now being utilized for pulp wood and as the Doyle rule does not give anything appreciable for logs under 8 inches in diameter, all under 8 inches is charged by the cord, the same being computed on the cubic contents of each piece, consequently a large quantity of this timber appears in my statements as so many cords of pulp wood, hence the number of pieces may appear to be less than it would seem it should be to those who see the timber passing particular points or who are led by newspaper reports.

Herewith are statements in detail:—

No. 1.—Statement of amounts outstanding prior to July 1, 1889, uncollected 15th September, 1906.

No. 2.—Statement of dues accrued at Ottawa since July 1, 1889, uncollected 15th September, 1906.

No. 3.—Statement of amounts accrued at Quebec prior to July 1, 1889, uncollected 15th September, 1906.

No. 4.—Statement of the number of pieces of square timber, saw logs, &c., which passed through the Ottawa works during the year ended 30th June, 1906.

No. 5.—Statement of dues accrued from each of the slides and works in the Ottawa district during the year ended June 30, 1906.

ST. MAURICE DISTRICT.

The revenue from this district was \$37,101.02, being \$669.81 more than previous year, and the largest in the history of these works.

The number of pieces of all kinds of timber which passed through the works was equivalent to 3,499,775 saw and pulp logs.

All the dues of 1905-6 were collected.

Since I took charge of this district in 1892, all the revenue has been collected.

The amount outstanding remains the same as at June 30, 1904, viz.:—\$14,481.49—all of which should be written off for reasons assigned in statement No. 6 herewith.

Again, there was very little rain this spring, and consequently a very large number of logs were left in the tributaries of the St. Maurice, and at this writing, unless the water rises very considerably there will be an unusually large quantity left in the main stream this fall. I looked for a large increase in the revenue for the current year (1906-7), but present indications lead me to fear that it may not be quite as good as the year just closed.

SESSIONAL PAPER No. 19

I think I am safe in saying that never in the history of the St. Maurice, were so few logs lost on the opening up of the river in the spring as this year, and the wisdom of providing alligator tugs for handling the heavy booms proved beyond a doubt, not only by the celerity with which the work was accomplished but by lessening the expense, for instance, the booms at Three Rivers were placed last spring with the aid of the alligator and 19 men, in a little over 12 hours, a task that formerly occupied 60 to 70 men with 3 scows at least three days.

There was also a small revenue for work done by the alligators at Three Rivers and Shawenigan Falls for the lumbermen and others, this item I hope to see increased this year.

I earnestly hope that the suggestion so often submitted of providing a system of water storage will not be lost to sight. Each year as time goes on, does the necessity for some such system seem more pressing, and I am convinced that if the matter were taken up now, no difficulty would be experienced in obtaining a guarantee from the parties interested of an amount sufficient, annually, to cover interest and working expenses. In this connection, I may submit that the subdivision of the annual cost of such a scheme might be left to the Drive Association, they to pay the whole sum and assess the contributors on the same basis as they levy the cost of handling the logs, besides exacting an additional fixed amount (previously agreed upon) from those operating water powers.

The necessity for the proposed dam at Grandes Piles has been fully demonstrated this season, as I am informed that owing to the water falling earlier than usual this season, and no great rise since early summer, an immense number of logs are stranded on the shoals above the Piles and all along the stream for miles above on both sides.

Should these logs remain in their present position this fall, and next spring prove even to a moderate degree like that of 1900 or 1901, the value of timber likely to be lost will amount to a sum largely approaching the estimated cost of the dam.

The construction of this dam is an imperative necessity, not only for the protection of the lumbermen but also for that of the government, for as I have frequently pointed out, the government is likewise interested, for the revenue on all timber going out into the St. Lawrence is absolutely lost, and if the delivery of the logs at Three Rivers cannot be fairly assured, doubtless those who have been contemplating the establishment of large enterprises, requiring great quantities of logs will naturally be slow to advance any further till some certainty be promised, that their mills will always be supplied at the proper season with necessary material.

With the proposed improvements I do not see any reason why the St. Maurice works should not, under capable management, prove to be one of the best paying investments owned by the government inside the next two years, for if the proposed ameliorations are immediately taken up and hurried to completion, it should not require more than a year to have on the St. Maurice as perfect a system for handling the timber as can be found anywhere.

NEWCASTLE DISTRICT.

The dues accrued from this district amounted to \$1,395.58, all of which was collected.

The tolls outstanding on June 30, 1906, amounted to \$3,556.89, of which \$3,521.19 should be written off in accordance with a judgment of the Exchequer Court; the remainder, \$35.70, will also have to be written off, the debtor being a very old man and hopelessly insolvent.

Full particulars of amount outstanding will be found in statement No. 7 herewith.

The revenue from this district has been declining gradually of late years, principally because three firms which formerly operated largely above Burleigh have ceased working, two of them have gone out of business, and the third only operates on streams coming in below Burleigh.

6-7 EDWARD VII., A. 1907

As all the works under the control of this department, but really forming a part of the navigation system have been recently transferred to the Department of Railways and Canals, leaving only the booms and slides at Fenelon Falls and the dam and slide at Burleigh to the Department of Public Works, the revenue will in future be ample to meet the cost of maintaining these works.

GRAVING DOCKS.

ESQUIMALT GRAVING DOCK.

The revenue from this service was \$14,368.12, being \$9,735.58 more than the previous year.

Of the 96 days the dock was used during the year, it was occupied by H.M. vessels for 23 days, Canadian government steamer for 4 days and by other vessels for 69 days.

For full details see statement No. 8 herewith.

I have to record the death by drowning of the late dock-master, Captain John Devereux, who was a very able officer, and from a personal examination of the books and accounts from the opening of the dock to the time of his death, I am glad to testify to the scrupulous care he bestowed on this part of the work.

The withdrawal of the fleet from Esquimalt did not produce the unfavourable effect on the revenue of this dock that I anticipated in my last report. Neither is the increased revenue of the past year to be attributed to this fact, but to the reason that a larger class of vessels now trade along the British Columbia coast and waters, and being too large for the marine railway and floating dock are forced to use the government dock.

.....

LÉVIS GRAVING DOCK.

The revenue from this work was \$3,261.50 more than for the previous year, being for 1905-6 \$19,715.88. See statement No. 9 herewith.

The dock was occupied for 195 days, exclusive of winter months, but dues were paid for 262 days, which included time previous to June 30, 1905, on vessels still in the dock on that date.

During the winter it was occupied for 135 days, at special rates, by steamers *Campagna*, *King Edward* and *Lord Strathcona*, and by the government dredges *International* and *Progress*.

KINGSTON GRAVING DOCK.

This dock was occupied for 128 days, exclusive of winter months. The income was for the past year \$9,983.67, or \$6,316.29 more than in 1904-5. See statement No. 10 for details.

The steamer *Caspian* wintered in this dock occupying it for 89 days.

RENTS.

All the rents accrued were collected.

The lease of part of Navy Island is under notice of cancellation, as the rental of \$9 was not paid in advance as stipulated.

SESSIONAL PAPER No. 19

The collections on this account were as follows:—

From old post office building, Victoria, B.C.	\$ 8,942 00
part Toronto island	1 00
land in Kingston, Ont.	1 00
part graving dock premises, Kingston	250 00
reserve, Victoria island, Ottawa, Ont.	2 00
part reserve Cap de la Madeleine, P.Q.	50 00
Cape Tormentine, buildings	1 00
beach, Burlington channel	1 00
reserve and water-power, Calumet island, P.Q.	25 00
tramway on breakwater, Goderich, Ont.	15 00
part temporary post office premises, Toronto, Ont.	50 00
port Morien, N.S.	5 00
	<u>\$ 4,843 00</u>

The following comparative table of Public Works revenue accrued 1905-6, compared with that of the year 1904-5, shows at a glance in what accounts increases and decreases herein reported have occurred:—

	Year 1905-6.	Year 1904-5	Increase 1905-6.	Decrease 1905-6.
SLIDES & BOOMS,	\$	\$	\$	\$
Ottawa District	37,947 69	44,652 03		6,704 34
St. Maurice District	37,101 02	36,431 21	669 81	
New Castle District	1,895 58	1,790 73		395 15
(Net Decrease in 1905-6, \$6,429.68)	76,444 29	82,873 97	669 81	7,099 49
GRAVING DOCKS.				
Esquimalt, B.C.	14,368 12	4,632 54	9,735 58	
Levis, P.Q.	19,715 88	16,454 38	3,261 50	
Kingston, Ont.	9,983 67	3,667 38	6,316 29	
	44,067 67	24,754 30	19,313 37	
Rents	4,343 00	4,231 50	11 50	
Total Increase Dues accrued, 1905-6.			\$ 12,895 19	

COLLECTIONS, 1905-6.

From slides and booms	\$81,211 21
From graving docks	44,067 67
From rents	4,343 00

Total \$129,621 88

Increase in collections 1905-6, \$17,690.56.

In conclusion I have to acknowledge the uniform courtesy and cheerful assistance accorded me at all times by the officers with whom I have been brought in contact during the year.

I have the honour to be, respectfully sir,

Your very obedient servant,

EDW. F. SMITH.

6-7 EDWARD VII., A. 1907

No. 1.— STATEMENT of Slidage and Boomage from the Ottawa Slides and Works, accrued prior to July 1, 1889, Outstanding June 30 1906, and remaining uncollected on September 15, 1906.

By whom due.	Bad and Doubtful Debts.	Chaudière Boomage in Suspense.	Other Slide and Boom Dues Disputed.	Total Outstanding Boom Dues on Sept. 30, 1902	Year to which Dues Belong.	Remarks.
John & Wm. McLean.	\$ cts. 53 14	\$ cts.	\$ cts.	\$ cts. 53 14	1873	Insolvent.
John Rowan.	342 50			342 50	1872-1873	"
Lemieux & Charrette.	21 30			21 30	1873	"
Tailleur & Lapierre.	148 10			148 10	1873-1874	"
Mosgrove & McHarry.	261 42			261 42	1873-1874	"
W. C. Wells.	600 90			600 90	1873-1874	"
Dufrene & McGarity.	528 80			528 80	1874-1875	"
Walton Smith.	171 46			171 46	1874-1875	"
A. H. Baldwin.	3,507 92			3,507 92	1871 to 1874	"
Hon. James Skead.	9,307 65			9,307 65	1861, 1863, 1864, 1869, 1875 to 1878	"
Batson & Currier.	5,558 70			5,558 70	1875 to 1877	"
A. F. A. Knight.	546 30			546 30	1878	"
James Walker.	11 25			11 25	1877	"
R. Campbell & Son.	1,558 50			1,558 60	1879 to 1881	"
James G. Bryson.	73 50			73 50	1886	"
Costello Bros.	90 62			90 62	1882	"
N. E. Cormier.	428 34			428 34	1888	"
James Yuill.	9 29			9 29	1876	Overcharge.
J. & B. Grier.	76 84			76 84	1883	"
R. & W. Conroy.	95 42			95 42	1882-1883	" reported in return S-38, for March, 1886.
A. P. White.	101 00			101 00	1881	"
B. Caldwell & Son.	4 33			4 33	1887	"
J. R. Booth.		9,871 92	398 88	10,270 81	1881 to 1888.	*\$398.88, counter claim for damages by the breaking of Coulonge Boom.
Perley & Pattee.		8,889 85		8,889 85	1881 to 1888.	
The Bronsons & Weston Lumber Co.		8,180 79		8,180 79	1881 to 1888.	
Pierce & Co.		462 18		462 18	1888	
G. A. Grier & Co.		1,060 50		1,060 59	1886-1887	*Chaudière boomage. These parties claim that they have maintained these works wholly at their own expense since 1881.
Escate late Levi Young.		1,461 20		1,461 20	1881 to 1885	
Wm. Mason.		413 85		413 85	1881 to 1888.	
Gilmour & Co.		406 27		406 27	1884	
John Rochester.		258 88		258 88	1881 to 1883.	
J. & G. Bryson.			252 20	252 20	1886	Counter claim for damage by breaking of Coulonge Works.
	23,997 28	31,006 54	651 08	55,653 90		

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 15, 1906.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

SESSIONAL PAPER No. 19

No. 2.—STATEMENT of Slide and Boom Dues accrued from the Ottawa River Works since July 1, 1889, Outstanding on September 15, 1906.

Name.	Year to which Dues belong.	Chaudière Boomage in Suspense.	Ordinary Dues.	Total Outstanding	Remarks.
		\$ cts.	\$ cts.	\$ cts.	
J. R. Booth.	1889 90	2,561 69		2,561 69	Chaudière boomage reported to Council, and referred to Treasury Board, should be written off.
The Bronsons & Weston L. Co.	1889 90	2,066 96		2,066 96	
Perley & Patten.	1889 90	1,263 26		1,263 26	
Wm. Mason & Sons.	1889 90	167 66		167 66	
Pierce & Co.	1889 90	913 48		913 48	
Alex. Fraser Acc. Thos. Stephens.	1890 91		28 42	28 42	Legal action taken to recover this.
J. R. Booth	1892 93		379 80	379 80	Retained by Mr. Booth in settlement of an account due him which the Auditor General refuses to pay, as Mr. Booth appears to be in arrears in this and Statement No. 1.
Bryson & Fraser.	1896		196 71	196 71	Have counter claim for work done on slide to this amount.
J. R. Booth	1903 04		339 27	339 27	These two parties claim that as a slide on the Petewawe is not now used, no charge should be exacted.
Hawkesbury Lumber Co.	1903 04		298 10	298 10	
		6,963 05	1,242 30	8,145 35	

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 15, 1906.

6-7 EDWARD VII., A. 1907

No. 3.—STATEMENT of Outstanding Slide Dues, Ottawa District, Bonds for which were sent to Quebec for Collection.

Names.	From 1860.	From 1861.	Total.
	\$ cts.	\$ cts.	\$ cts.
Hon. James Skead.....	245 00	210 00	455 00
James Mair		696 75	696 75
	245 00	906 75	1,151 75

These amounts were uncollected, as the parties claimed damages for loss caused by the Madawaska boom breaking in 1860.

A decision on their claims was not arrived at till August 2, 1869. On the 5th idem Messrs. Skead and Mair were notified that the department could not recognize their claim.

To the best of my knowledge, this decision was never communicated to the collector of slide dues, consequently these accounts remained in abeyance.

Since then both parties died, and I believe both were insolvent at the time of their death.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS
OTTAWA, September 15, 1905.

No. 4.—STATEMENT of the number of pieces of square timber, saw-logs, &c., that passed through the government slides and works on the River Ottawa and its tributaries during the fiscal year ended June 30, 1906.

	Pieces.
Square timber.. . . .	545
Saw-logs.. . . .	4,497,180
Boom and dimension timber.. . . .	95,807
Cedars.. . . .	11,440
Railroad ties.. . . .	573,757
Fence posts.. . . .	274,146
Total.. . . .	5,452,825

Also 30,918½ cords of pulpwood.

Revenue accrued on the above was, \$37,947.69.

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 15, 1906.

SESSIONAL PAPER No. 19

No. 5.—STATEMENT showing the dues accrued on the under-mentioned works on the River Ottawa and its tributaries during the fiscal year ended June 30, 1906.

River or other Improvement.	Amount.
Main Ottawa.....	\$ 2,518 31
Cheneaux boom.....	7,537 30
River Petewawa.....	4,940 31
“ Madawaska.....	1,817 41
“ Coulonge.....	7,131 64
“ Dumoine.....	240 89
Black river.....	6,539 98
Gatineau.....	7,221 85
	<hr/> \$37,947 69

Amounting to \$37,947.69.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 15, 1906.

EDWARD T. SMITH,
Collector of Public Works Revenue.

No. 6.—STATEMENT of Slide and Boom Dues from the St. Maurice Slides and Works outstanding on June 30, 1906, and remaining uncollected on September 15, 1906.

Name.	Year to which Dues belong.	Amount.	Total.	Remarks.
		\$ cts.	\$ cts.	
George Baptist, Son & Co.	1878	469 95		
"	1879	2,110 62		
"	1880	1,696 18		
"	1881	293 69		
"	1882	165 80		
"	1884	118 50		
"	1888	4 28	4,859 02	Have counter claims for damages to logs caused by the booms not being stretched early enough in the spring of 1878 to prevent the logs going over the chutes.
Ross, Ritchie & Co.	1878	3,072 84		
"	1883	2,173 68		
"	1884	28 96		
"	1886	1 62		
"	1887	4 38		
Alex. Baptist.....			5,281 48	The claims were submitted to Special Commissioner, Mr. McDougall, afterwards Judge, who, after hearing the evidence on both sides, recommended that the claims of the parties should be allowed.
	1879		2,116 96	
Wm. Ritchie & Co	1888	779 24		
"	1889	332 11	1,111 35	
Ritchie Bros	1886	413 43		Of this amount \$754.20 is claimed to be an overcharge. Insolvent.
"	1887	634 71	1,048 14	This amount is composed of overcharges in 1886 and 1887 of \$842.76 and overpayment in 1884 of \$205.38.
G. B. Hall	1890		49 34	Insolvent.
T. E. Normand	1890		42 28	Claims that this balance is an overcharge.
Treffle Biron	1891		0 92	Would cost more to collect than it is worth.
			14,481 49	

To make this balance agree with the Public Accounts, there should be deducted \$7.93 over credited Alex. Baptist, and \$217.17 added thereto, being \$190.40 paid July 23, 1884, and \$26.77 over-charged in error to Wm. Little, not in any of the collector's returns, which will give balance due September 30, 1894, of \$14,690.73.

EDWARD T. SMITH,

Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 15, 1906.

6-7 EDWARD VII., A. 1907

No. 7.—STATEMENT of Slide and Boom Dues accrued from the Newcastle and Trent River Works, outstanding on June 30, 1905, and remaining uncollected September, 15, 1906,

Name.	Year to which Dues belong.	Amounts disputed.	Ordinary Dues.	Total.	Remarks.
		\$ cts.	\$ cts.	\$ cts.	
Irwin & Boyd	1881	59 79		59 79	Insolvent.
Thomson & McArthur	1880	52 78		52 78	
Jabez Thurston	1882	12 50		12 50	
McDougall & Ludgate	1879	65 07		65 07	
Bigelow & Trounce	1882 to 1885	216 21		216 21	
R. G. Strickland	1882, '83, '85, '86 and '87	215 08		215 08	Dead and estate distributed.
Est. late Geo. Hillard	1877 to 1883 and 1886	354 15		354 15	
T. G. Hazlett	1881, '82, '84 to '89	885 25		885 25	According to judgement in Exchequer Court, <i>re</i> Boyd <i>vs.</i> Smith, these cannot be collected.
J. M. Irwin	1882, '83, '85 to '88	698 45		698 45	
D. Ulyot	1881 to 1887	547 68		547 68	
Green & Ellis	1881 to '83, '85, '88, and '89	157 01		157 01	
A. W. Parkin	1884, '85, '88, '90, and 91	65 92		65 92	
The Dickson Estate	1883	137 50		137 50	Sent to Dept. of Justice for collection.
Alfred McDonald	1888	40 80		40 80	
John Parkin	1889	13 00		13 00	
John Dovey	1894, '95, 96.		35 70	35 70	
		3,521 19	\$35 70	3,556 89	

EDWARD T. SMITH,

Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 15, 1906.

SESSIONAL PAPER No. 19

No. 8.—THE DRY DOCK AT ESQUIMALT, B.C.

STATEMENT of Dues and other Charges collected during the Year ending June 30, 1906.

Name of Vessel Docked.	Tonnage.	PERIOD OF DOCKAGE.		Dockage Charges.	Other Charges.	Total.
		From.	To.			
		1905.	1905.	\$ cts.	\$ cts.	\$ cts.
S. M. S. 'Falke'	1,574	Aug. 26..	Sep. 1..	782 00	21 00	803 00
Govt. Str. 'Quadra'	573	Oct. 6..	Oct. 10..	390 00	4 20	394 20
S.S. 'Epsom'	4,556	Nov. 24..	Nov. 27..	664 00	17 40	681 40
S.S. 'Hounslow'	2,902	Dec. 3..	Dec. 6..	598 00	15 00	613 00
S.S. 'Henley'	3,239	" 12..	" 14..	505 00	22 20	527 20
		1906	1906			
H. M. S. 'Shearwater'	980	" 22..	Jan. 10..	674 11		674 11
S.S. 'Elleric'	3,569	Jan. 14..	" 16..	512 00	1 20	513 20
S.S. 'Milverton'	2,192	Feb. 7..	Feb. 9..	484 00		484 00
S.S. 'Cambrian King'	3,600	" 22..	" 24..	512 00	1 20	513 20
H. M. S. 'Egeria'	940	" 26..	Mar. 1..	280 01		280 01
S.S. 'Aysgarth'	3,118	Mar. 9..	" 11..	503 00	19 80	522 80
Ship 'Bermuda'	2,846	April 5..	April 7..	497 00	3 00	500 00
S.S. 'Wyneric'	4,992	" 9..	" 11..	540 00	7 20	547 20
S.S. 'Blackheath'	2,571	" 19..	" 22..	584 00	10 20	594 20
S.S. 'Cheawick'	3,246	" 21..	" 23..	505 00	12 60	517 60
S.S. 'Ohio'	3,488	May 9..	May 14..	840 00	23 00	863 00
S.S. 'Victoria'	3,502	" 18..	" 22..	733 00	16 20	749 20
S.S. 'Pennsylvania'	3,343	" 26..	" 27..	507 00	14 40	521 40
S.S. 'Dulwich'	3,278	" 31..	June 2..	505 00	10 20	516 20
S.S. 'Otta'	3,250	June 2..	" 3..	400 00	4 20	404 20
S.S. 'Mariechen'	3,930	" 7..	July 1..	3,137 00	12 00	3,149 00
	61,689			14,153 12	215 00	14,368 12

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 15, 1906.

6-7 EDWARD VII., A. 1907

No. 9.—THE DRY DOCK AT LEVIS, QUE.

STATEMENT of Dues and other Charges collected during the Year ending June 30, 1906.

Name of Vessel Docked.	Tonnage.	PERIOD OF DOCKAGE.		Dockage Charges.	Other Charges.	Total.
		From.	To.			
		1905.	1905.	\$ cts.	\$ cts.	\$ cts.
Two Scows.....	160	April 27..	July 21..	520 00	12 50	532 50
S.S. 'Montcalm'.....	1,432	May 19..	" 21..	4,409 72	79 80	4,489 52
S.S. 'Aranmore'.....	1,170	Entry Fee		200 00		200 00
".....		July 23..	Aug. 19..	1,571 55	3 75	1,575 30
S.S. 'Unique'.....	2,036	Entry Fee		200 00		200 00
".....		Aug. 22..	Sep. 8..	1,742 24	19 50	1,761 74
S.S. 'Virginian'.....	4,195	Entry Fee		200 00		200 00
".....		Oct. 16..	Nov. 7..	3,145 80	59 00	3,204 80
S. 'Euphemia'.....	2,050	Entry Fee		200 00		200 00
".....		Nov. 10..	Nov. 26..	1,656 00	14 00	1,670 00
S.S. 'Campana'.....		Entry Fee		200 00		200 00
S.S. 'King Edward'.....		"		200 00		200 00
S. 'Campana'.....	1,697			800 00		800 00
S. 'King Edward'.....	355	Wintering		200 00		200 00
S.S. 'Lord Strathcona'.....	495	1905	1906	300 00		300 00
Dredge 'International'.....	528½	Dec. 4..	April 17..	400 00	5 81	405 81
Dredge 'Progress'.....		1906		400 00	13 30	413 30
Barge 'Rutherford'.....	281	May 1..	May 12..	454 55		454 55
S.S. 'Montcalm'.....	1,432	" 16..	June 1..	1,381 04	1 75	1,382 79
Str. 'Speedy'.....	235	June 1..	" 5..	346 6		346 60
S. 'Scottish Hero'.....	2,202	" 6..	" 12..	964 24		964 24
tr. 'Constance'.....	185	" 15..	" 20..	346 25		346 25
Less Demurrage—				19,837 99	209 41	20,047 40
S.S. 'Euphemia'.....				331 52		331 52
	18,453½			19,506 47	209 41	19,715 88

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 15, 1906.

SESSIONAL PAPER No. 19

No. 10.—THE DRY DOCK AT KINGSTON, ONT.

STATEMENT of Dues and other Charges collected during the Year ending June 30, 1905.

Name of Vessel Docked.	Tonnage.	PERIOD OF DOCKAGE.		Dockage Charges.	Other Charges.	Total.
		From	To			
		1905.	1905.	\$ cts.	\$ cts.	\$ cts.
Barge Quebec.....	989	July 1.	July 6.	425 82	5 00	430 82
Str. 'New York'.....	295	" 11.	" 18.	172 58		172 58
Barge Selkirk.....	719	" 18.	" 19.	121 90		121 90
Str. 'Ramona'.....	57	" 19.	" 20.	20 00		20 00
Str. 'Navajo'.....	197	" 25.	" 28.	79 40		79 40
Str. 'Osceola'.....	709	" 31.	Aug. 2.	195 35		195 35
Str. 'Argyle'.....	700	Aug. 4.	" 11.	389 50	5 00	394 50
Str. 'Cardinal'.....	237	" 14.	" 25.	237 40		237 40
Str. 'D. D. Calvin'.....	750	" 28.	" 30.	188 00		188 00
Cargo.....	28					
Str. 'Lake Michigan'.....	588	Sept. 1.	Sept. 5.	225 40		225 40
Str. 'Calumet'.....	153	" 6.	" 12.	120 60	5 00	125 60
Barge Quebec.....	989	" 14.	" 24.	792 47		792 47
Str. 'Toronto'.....	2,779	" 25.	" 28.	716 96		716 96
Str. 'New Island Wanderer'.....	123	Oct. 2.	Oct. 4.	44 60		44 60
Tug Jas. Norris & Dredge Haney.....	50					
Barge Alberta.....	200	Oct. 4.	Oct. 5.	60 50		60 50
Barge Melrose.....	314	" 25.	" 26.	62 80		62 80
Barge Melrose.....	740	" 30.	" 30.	124 00		124 00
Str. 'Strathcona'.....	1,881	Nov. 3.	Nov. 4.	324 94		324 94
Tug Beaver.....	41	" 13.	" 15.	40 00		40 00
Str. 'John Rugee'.....	1,217	" 21.	" 22.	214 30		214 30
Sch. Queen of the Lakes.....	190	" 24.	" 25.	48 00		48 00
Barge Brighton.....	607	Dec. 4.	Dec. 9.	280 66	10 00	290 66
Barge Melrose.....	740	" 9.	" 17.	460 70	5 00	465 70
Tug Glide.....	78	" 26.	" 27.	20 00	5 00	25 00
Str. 'Caspian'.....		Jan. 2.	Entrance Fee.	100 00		100 00
Str. 'Caspian'.....	958	" 2.	April 1.	790 00		790 00
Str. 'New Island Wanderer'.....	123	April 7.	" 7.	24 60		24 60
Str. 'Advance'.....	1,031	" 9.	" 11.	225 27		225 27
Str. 'Neepawah'.....	1,799	" 11.	" 20.	1,174 38	9 00	1,183 38
Str. 'Gordon Campbell'.....	1,158	" 21.	" 22.	165 80	5 00	170 80
Tug Jessie Hall.....	56	" 23.	" 24.	20 00		20 00
Str. 'New York'.....	295	" 25.	" 26.	59 00		59 00
Str. 'St. Lawrence'.....	319	" 26.	" 28.	86 13		86 13
Tug Jessie Hall.....	56	" 30.	" 30.	20 00		20 00
S.S. 'Turbinia'.....	1,064	May 3.	May 5.	268 12		268 12
Str. 'Kingston'.....	2,925	" 7.	" 10.	752 00		752 00
Barge Cornwall.....	586	" 10.	" 14.	231 66		231 66
Barge Cobourg.....	607	" 15.	" 18.	195 68	6 00	201 68
Barge Flora Calveth.....	190	" 28.	" 29.	48 00	5 00	53 00
Tug Emmerson.....	276	June 8.	June 8.	55 20		55 20
Str. 'Donnelly'.....	319	" 11.	" 19.	208 95		208 95
Barge Thrush.....	584	" 19.	" 20.	108 40		108 40
Str. 'New Island Wanderer'.....	123	" 29.	" 30.	24 60		24 60
	27,840			9,923 67	60 00	9,983 67

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 15, 1906.

PART VII

MISCELLANEOUS

ACTS OF PARLIAMENT, PASSED AT SESSION OF 1906, HAVING REFERENCE TO THIS DEPARTMENT.

CONTRACTS LET BY THIS DEPARTMENT.

PROPERTY PURCHASED OR SOLD.

PROPERTY, LEASED TO OR BY THE DEPARTMENT.

CURATOR'S REPORT, NATIONAL ART GALLERY.

NAMES OF CHIEF OFFICERS OF THE DEPARTMENT.

NAMES OF OFFICIALS EMPLOYED ON SLIDES AND BOOMS.

NAMES OF PERSONS EMPLOYED ON GRAVING DOCKS.

NAMES OF ENGINEERS, FIREMEN AND CARETAKERS OF PUBLIC BUILDINGS.

AND THE OFFICIAL CORRESPONDENCE OF THE DEPARTMENT.

FOR THE

FISCAL YEAR ENDED JUNE 30, 1906

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, November 1, 1906.

SIR,—I have the honour to transmit herewith the following statements concerning the transactions of the department during the last fiscal year, with respect to contracts and property, and which are required for insertion in the annual report, 1905-6, viz. :—

No. 1.—Statement of contracts let by this department during the fiscal year ended June 30 last.

No. 2.—Statement of property purchased and sold by the department during the same period.

No. 3.—Statement of property leased to and by the said department during the same period, and

No. 4.—A list of some of the Public Acts of the Parliament of Canada, passed at the last session, and Orders in Council having reference to the department.

I have the honour to be, sir,

Your obedient servant,

J. A. CHASSÉ,
Law clerk.

FRED GÉLINAS, Esq.,
Secretary of the Department of Public Works,
Ottawa, Ont.

STATEMENTS

SHOWING

- 1st.—CONTRACTS LET BY THE DEPARTMENT OF PUBLIC WORKS OF CANADA, FROM JUNE 30, 1905, TO JUNE 30, 1906.**
- 2nd.—PROPERTY PURCHASED OR SOLD BY THE DEPARTMENT OF PUBLIC WORKS DURING THE FISCAL YEAR ENDED JUNE 30, 1906.**
- 3rd.—PROPERTY LEASED TO AND BY THE DEPARTMENT OF PUBLIC WORKS DURING THE FISCAL YEAR ENDED JUNE 30, 1906.**

6-7 EDWARD VII., A. 1907

No. 1.—CONTRACTS let by the Department of Public Works of Canada from June 30, 1905, to June 30, 1906.

Works.	Names of Contractors.	Date of Contract	Amount.
PUBLIC BUILDINGS.			\$ cts.
<i>Nova Scotia.</i>			
Amherst, Post Office. Supply of coal.	Maritime Coal & Ry. Co.	Sept. 15, 1905.	247 90
Annapolis " " "	James Kenna	Oct. 17, 1905.	254 37
Antigonish " " "	Acadia Coal Co., Ltd.	Sept. 16, 1905.	116 70
" " Public Building. Heating apparatus.	Rhodes, Curry & Co.	April 23, 1906.	1,095 00
" " " Wiring.	K. Sweet Co.	June 14, 1906.	650 00
" " " Tower Clock	R. D. Kirk.	June 9, 1906.	1,100 00
Arichat, Post Office. Supply of coal	I. Leblanc, Terrio & Co.	Sept. 25, 1905.	234 00
Baddeck " " "	The Cape Breton Coal Mining Co.	Sept. 14, 1905.	125 80
Canso, Construction of a P.O., etc., Building.	James Reid	Sept. 13, 1905.	13,869 00
Cape Breton, Supply of Telegraph wires.	Alex. Macpherson & Son.	Sept. 6, 1905.	707 50
Dartmouth, Post Office. Supply of coal.	Acadia Coal Co., Ltd.	Sept. 18, 1905.	78 18
Digby " " "	Canada Coal & Railr. Co.	Sept. 18, 1905.	24 75
Guysborough " " "	The Cape Breton Coal Mining Co.	Sept. 14, 1905.	137 20
Halifax, Immigration Building. Additions to Heating apparatus	Martel & Langelier	Aug. 30, 1905.	2,350 00
" " Construction of a Detention Building.	S. A. Marshall & Son	Oct. 23, 1905.	51,997 00
" " Trachoma Hospital. Supply of water.	City of Halifax.	Dec. 5, 1905.	p. ann. 240 00
" " Construction of Quarantine Barn.	Freeman Bros.	Dec. 21, 1905.	2,550 00
" " New Custom House. Heating apparatus.	Longard Bros.	Dec. 26, 1905.	4,798 00
" " " Wiring and fittings.	J. A. Dunn & Co.	May 21, 1906.	3,900 00
" " Ass't. Rec. Gen'l Office. Supply of coal.	Intercolonial Coal Mining Co.	Sept. 18, 1905.	40 20
" " Custom House. Fittings.	M. E. Keefe.	May 31, 1906.	7,400 00
" " " Concrete sidewalks.	M. E. Keefe	June 28, 1906.	1,420 00
" " Dominion Building. Supply of coal.	S. Cunard & Co.	Sept. 18, 1905.	1,118 82
" " Ass't. Rec. Gen'l Office. Supply of coal.	S. Cunard & Co.	Sept. 18, 1905.	32 85
" " Immigration Building " "	S. Cunard & Co.	Sept. 18, 1905.	529 18
" " Detention Hospital " "	S. Cunard & Co.	Sept. 18, 1905.	30 40
" " Examining Warehouse " "	S. Cunard & Co.	Sept. 18, 1905.	.....
Kentville, Public Building. Supply of coal	P. E. Lloyd	Oct. 2, 1905.	.....
Lawlor's Island, Construction of a Hospital	Rhodes, Curry & Co., Ltd.	Feb. 14, 1906.	10,595 00
Liverpool, Post Office. Supply of coal.	The Cape Breton Coal Mining Co.	Sept. 14, 1905.	161 50
Lunenburg " " "	Benjamin Anderson	Sept. 13, 1905.	.....
" " Repairs.	Wm. Ronkey.	April 21, 1906.	2,175 00
New Glasgow " Supply of coal	Charles W. Ives	Sept. 12, 1905.	217 23
North Sydney " " "	The Cape Breton Coal Mining Co.	Sept. 14, 1905.	195 98
Pictou, Custom House " "	The Cape Breton Coal Mining Co.	Sept. 14, 1905.	197 03
Pictou, Post Office " "	The Cape Breton Coal Mining Co.	Sept. 14, 1905.	154 53
Springhill " " "	Cumberland Ry. & Coal Co.	Sept. 18, 1905.	36 60
" " Fencing, etc.	W. T. Proctor.	July 25, 1905.	1,600 00
Sydney, Public Building. Electric wiring.	W. A. Mackay & Co.	April 18, 1906.	1,050 00
" " Supply of coal.	Dominion Coal Co.	Sept. 15, 1905.	.....
Sydney Mines " Fittings.	H. R. McDonald.	Dec. 18, 1905.	1,635 00
" " Heating Apparatus.	C. Thompson	Feb. 20, 1906.	1,190 00
Truro, Post Office. Supply of coal	Acadia Coal Co., Ltd.	Sept. 18, 1905.	113 40
Windsor " " "	Fred. W. Dimock	Sept. 11, 1905.	354 94
Yarmouth " " "	Killam Bros.	Sept. 13, 1905.	294 50
<i>Prince Edward Island.</i>			
Charlottetown, Dominion Building. Supply of coal	The Cape Breton Coal Mining Co.	Sept. 14, 1905.	590 00
" " " "	Peake Bros. & Co.	Sept. 12, 1905.	17 49
" " Public Building. New Boilers.	Bruce Stewart & Co.	Sept. 27, 1905.	1,450 00
" " Quarantine Station. Works.	H. & S. Lowe	Oct. 16, 1905.	675 00
Montague, Post Office. Supply of coal.	Geo. Wightman	Sept. 12, 1905.	93 62

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—Continued.			\$ cts.
<i>Prince Edward Island—Concluded.</i>			
Souris, Construction of a P.O., etc. Building	B. Creamer	Aug. 1, 1905	11,800 00
" Public Building. Heating Apparatus	B. Creamer	April 12, 1906	810 00
Summerside, Public Building, Supply of coal	Jas. Read & Co.	Sept. 12, 1905	408 93
<i>New Brunswick.</i>			
Bathurst, Post Office, Supply of Coal	Geo. E. Mercier	Sept. 13, 1905	12 92
" " " " "	John Russel & Co.	" 14, 1905	350 00
Campbellton, Public Building, Heating Apparatus	J. & D. Harquail	Oct. 24, 1905	1,380 00
" " " Fencing and sodding	" "	June 14, 1906	690 00
" " " Fitting	" "	Dec. 1, 1905	3,300 00
" " " Granolithic sidewalks	" "	April 21, 1906	458 00
Chatham, Post Office, Supply of Coal	The Cape Breton Coal Mining Company	Sept. 14, 1905	222 88
" " Repairs	J. McDonald & Co.	March 1, 1906	1,850 00
Dalhousie, " Supply of Coal	Geo. E. Mercier	Sept. 13, 1905	298 90
Fredericton, " " "	Frank I. Morrison	" "	267 12
" " Alterations to fittings	E. C. Barry	June 14, 1906	1,670 00
" Drill Shed, Heating Apparatus	C. J. B. Simmons	April 6, 1906	980 00
" " Wiring	" "	June 15, 1906	700 00
Marysville, Post Office, Supply of Coal	Frank I. Morrison	Sept. 13, 1905	106 65
Moncton, " " "	Springhill Coal Company	Dec. " "	" "
" " Alterations to	Haley Bros.	Dec. 9, 1905	1,675 00
New Castle, " Supply of Coal	John Russel & Co.	Sept. 14, 1905	322 77
St. John, " " "	Vroom & Arnold	" 13, 1905	29 90
" Immigration Build. " "	James S. McGivern	" 14, 1906	301 46
" West, Post Office, " "	R. P. & W. F. Starr	" 13, 1905	66 33
" City " " "	" "	" "	272 77
" Savings Bank " "	" "	" "	224 44
" Custom House, " "	" "	" "	1,606 05
" Immigr. Building " "	" "	" "	52 20
" Custom House " "	Vroom & Arnold	" "	" "
" Partridge Island Hospital, Heating Ap.	P. Campbell & Co.	Dec. 23, 1905	1,637 00
" Construction of 2 Quarantine Barns	James E. Kane	Jan. 15, 1906	4,822 00
" Post Office, Plumbing	William Kiley	March 24, 1906	90 00
" " & Savings, Paint, varnish, &c.	James Huey	" "	240 00
St. Stephens " Supply of Coal	Purves & Graham	Sept. 13, 1905	" "
Sussex " " "	Thomas H. Brown	" 14, 1905	420 00
Tracadie, Lazaretto, " " "	B. M. Lannigan	" 23, 1905	773 78
Woodstock, Post Office, " " "	A. E. Jones	" 10, 1905	242 32
" Armory, Heating apparatus	Fewer Bros.	Jan. 16, 1906	2,700 00
" " Elect. wiring & fixtures	Small & Fisher Co. Ltd.	Sept. 20, 1905	1,500 00
<i>Quebec.</i>			
Acton Vale, Public Building, Fittings	Joseph Bourque	July 21, 1905	1,800 00
" " Work of grading	Ed. Provost	Aug. 19, 1905	1,500 00
" " Tower Clock	Edmond Eaves	April 28, 1906	247 00
Aylmer, Post Office, Supply of Coal	J. G. Butterworth & Co.	Oct. 2, 1905	228 20
Berthierville, " " "	E. Boulanger	Sept. 21, 1905	90 00
" " Wiring	St. Maurice Light & P. Co.	June 5, 1906	225 00
Buckingham, Post Office, Supply of Coal	F. L. Bisson	Sept. 15, 1905	163 81
Chicoutimi, Construction of a Public Building	Adolphe Beaulieu	Aug. 7, 1905	22,472 00
Caticook, Post Office, Supply of Coal	W. C. Webster & Son	Sept. 15, 1905	120 00
Drummondville, " " "	The Pennsylvania Coal Co.	Oct. 4, 1905	120 00
Dundee, Custom House	A. S. Mathews	Sept. 18, 1905	33 00
Farnham, Post Office	A. B. Comeau & Co.	" 16, 1905	64 50
Fraserville " " "	Nap. Dion	" 18, 1905	270 07
Granby, " " "	R. W. Bradford	" 15, 1905	233 10
Grosse Isle, Quarantine Station, Sailors' Quarters	Charles Vézina	Oct. 4, 1905	1,900 00

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—Continued.			
Quebec—Concluded.			
			\$ cts.
Terrebonne Post Office. Fittings.....	E. Piché.....	Oct. 17, 1905.	1,635 00
" " Electric wiring fixtures.....	L. C. Masson.....	" 17, 1905.	349 00
" " Heating apparatus.....	A. Brunette.....	Nov. 21, 1905.	708 00
Thetford Mines Post Office. Supply of coal.....	Jos. Demers.....	Sept. 7, 1905.	135 00
Three Rivers " " ".....	The Three Rivers Coal & Transportation Co.....	" 21, 1905.	236 97
" Custom House " " ".....	The Three Rivers Coal & Transportation Co.....	" 21, 1905.	296 75
Valleyfield. Post Office " " ".....	Beaner & Chasle.....	" 16, 1905.	271 25
" " Electric lights.....	Théo. Bélanger.....	Dec. 29, 1905.	600 00
" " Fitting, &c.....	".....	July 5, 1905.	5,030 00
Victoriaville. Post Office. Supply of coal.....	F. Beauchesne.....	Sept. 18, 1905.	200 00
Ontario.			
Alexandria. Construction of a Post Office Building	Wm. G. Rowe.....	May 28, 1906.	8,787 00
" Post Office. Supply of coal.....	Angus McDonald & Son.....	Sept. 13, 1905.	
Almonte, " " ".....	Wm. McArthur.....	" 22, 1905.	198 80
Amherstburg, " " ".....	Falls Bros.....	" 14, 1905.	182 00
Arnprior, " " ".....	J. S. Moir.....	" 13, 1905.	247 76
Barrie, " " ".....	James Cheesman.....	" 13, 1905.	223 30
Belleville, " " ".....	C. C. Leavens.....	" 13, 1905.	575 10
" " Fittings, &c.....	G. A. Bennett.....	May 1, 1906.	2,215 00
Berlin, " Supply of coal.....	C. A. Wilson & Co.....	Sept. 14, 1905.	295 90
Bowmanville, " " ".....	C. A. Wilson.....	" 14, 1905.	159 60
Brampton, " " ".....	".....	" 14, 1905.	184 63
Brantford, " " ".....	Wilson Coal Co.....	" 15, 1905.	448 75
Bridgeburg, " Heating apparatus.....	J. H. Crowe.....	Nov. 29, 1905.	1,900 00
Brockville, " Supply of coal.....	The Central Canada Coal Co.....	Sept. 15, 1905.	357 00
Carleton Place, " " ".....	Taylor Bros. & Co.....	" 13, 1905.	141 45
Cayuga, " " ".....	A. J. Grant.....	" 25, 1905.	127 53
Chatham, " " ".....	A. R. Crow.....	" 14, 1905.	229 94
" Armoury. Electric wires and fixtures.....	John Piggott & Sons.....	" 21, 1905.	1,800 00
" Drill Hall. Heating apparatus.....	".....	Jan. 16, 1906.	3,080 00
Clinton, Post Office. Supply of coal.....	C. A. Wilson & Co.....	Sept. 14, 1905.	60 46
Cobourg, " " ".....	Geo. Plunkett.....	" 15, 1905.	361 45
Cornwall, " " ".....	A. F. Mulhern & Co.....	" 15, 1905.	300 00
Deseronto, " " ".....	The Rathbun Co.....	" 14, 1905.	272 15
Dundas, " " ".....	Chs. Sturrock.....	" 15, 1905.	53 59
Fort William, " " ".....	James Murphy.....	" 14, 1905.	320 00
Galt, " " ".....	A. J. Calvin.....	" 14, 1905.	
Gananoque, " " ".....	Thos. Roach.....	" 14, 1905.	212 50
Goderich, " " ".....	F. Barlow Holmes.....	" 14, 1905.	226 17
Guelph, " " ".....	Kloepfer & Co.....	" 18, 1905.	362 81
" Construction of an Armoury.....	Nagle & Mills.....	June 1, 1906.	80,000 00
Hamilton, Post Office. Supply of coal.....	R. E. Clisdell.....	Sept. 25, 1905.	
" Weights and Measures and Gas Insp. Supply of coal.....	".....	" 25, 1905.	28 75
" Post Office. Paving.....	P. McKay.....	" 9, 1905.	695 00
Hawkesbury, " Heating apparatus.....	Robert Cameron.....	Nov. 29, 1905.	1,350 00
" " Fittings.....	Doucet & Bélanger.....	April 21, 1906.	1,540 00
" " Paving, &c.....	R. Cameron.....	May 23, 1906.	1,364 00
" " Electric wiring.....	Eug. Fleury.....	June 22, 1906.	390 00
Ingersoll, " Supply of coal.....	Nagle & Mills.....	Sept. 11, 1905.	6 15
" " ".....	C. A. Wilson & Co.....	" 14, 1905.	237 13
Kingston, " " ".....	P. Walsh.....	" 13, 1905.	305 45
" Custom House.....	".....	" 13, 1905.	285 50
" Additional Stable for 'B' Battery.....	D. S. Booth.....	Oct. 27, 1905.	6,493 00
Lindsay, Post Office. Supply of coal.....	McLennan & Co.....	Sept. 13, 1905.	222 88
London, " " ".....	R. E. Clisdell.....	" 25, 1905.	
" Custom House. " " ".....	".....	" 25, 1905.	

6-7 EDWARD VII., A. 1907

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.	Names of Contractors.	Date of contract	Amount.
PUBLIC BUILDINGS— <i>Continued.</i>			\$ cts.
Ontario.— <i>Continued.</i>			
London. Post Office. Additions to new boiler	Leonard & Son.	July 25, 1905.	548 25
" " Heating apparatus.	Wm. Tytler	" 27, 1905.	4,835 00
" Construction of a Military Store Bldg	R. G. Wilson	Aug. 8, 1905.	24,820 00
" Changes in Military Store Building	"	Oct. 28, 1905.	500 00
" Heating apparatus in Milit. Store Bldg.	Smith Bros. & Co.	April 12, 1906.	2,236 00
" Post Office. Walks, &c.	Geo. Norton	May 18, 1906.	250 00
" " Cases	Wm. Tytler	June 23, 1906.	594 00
Napanee. " Supply of coal.	Charles Stevens	Sept. 18, 1905.	192 00
Niagara Falls. Post Office. Supply of Coal.	W. E. Thomas	Sept. 15, 1905.	225 60
Orangeville. " " Fittings	Clarke & Harmah	Sept. 15, 1905.	162 50
" " " Supply of Coal.	Library Bur. of Can. Ltd.	June 23, 1906.	1,950 00
Orillia. " " Heating Apparatus.	C. A. Wilson & Co	Sept. 14, 1905.	201 00
Oshawa. " " Interior fittings	W. J. Trick	Nov. 25, 1905.	1,775 00
" " P. Office. Sidewalks, roadway and lawn	W. J. Trick	Feb. 17, 1906.	2,950 00
Ottawa. Experimental Farm. Supply of coal.	W. J. Trick	June 26, 1906.	755 00
" Public Buildings.	McCullough & Co.	Sept. 13, 1905.	1,259 87
" Post Office. Copper for roof.	John Heney & Son	May 5, 1906.	48,585 35
" Additions, &c. to Government House.	McFarlane & Douglas.	July 28, 1905.	persq. 33 50
" Archives Building. Alterat. to tower, &c	J. & C. Low	Sept. 7, 1905.	16,950 00
" Parl. and Deptl Bldgs. Elect. clock system	W. H. McGillivray.	Sept. 19, 1905.	3,192 00
" Wellington St. Bitulithic pavement.	Bell Teleph. Co. of Can. L.	Sept. 19, 1905.	p. an. 330 00
" " Warren Bituminous Pav-	ing Co. of Ontario, Ltd.	Sept. 20, 1905.	Sch. of price
" Post Office. Plumbing goods.	Canada Brass & Sup. Co.	Sept. 25, 1905.	2,455 01
" Printing Bureau. New Boiler.	Collingwood Shipbldg. Co	Sept. 20, 1905.	1,280 00
" " Additionnal story	Doran & Devlin	Sept. 19, 1905.	35,200 00
" Post Office. Steel conduits and fittings.	Ahearn & Soper, Ltd.	Sept. 23, 1905.	897 31
" " Freight elevator.	Otis Fensom Elev. Co. Ltd	Sept. 23, 1905.	2,800 00
" " Dept. Sav. Bk. Metall. fittings	The Office Sp. Mfg. Co. L.	Feb. 1, 1906.	7,993 00
" Archives Building. Fitting up Library.	Canada Cabinet Co.	Jan. 26, 1906.	1,800 00
" House of Commons. Ventilating appar.	Can. Buffalo Forge Co. L.	Dec. 28, 1905.	4,700 00
" P.O. Dept. Savings Br. Metallic fittings.	Eclipse Manuf. Co. Ltd.	Feb. 15, 1906.	10,490 00
" Archives. Materials re heating apparatus	Butterworth & Co.	Feb. 17, 1906.	1,789 00
" Rideau Hall. Work in Governor's room	Castle & Son.	Mch. 19, 1906.	3,281 00
" P. Office. Customs Parcels Dept. Fittings	S. L. Kyle	Apl. 3, 1906.	796 00
" " Dept. Steel Work	Office Spec. Mfg. Co. Ltd.	Apl. 23, 1906.	1,517 00
" Public Buildings. Supply of Ice.	Hygiene Ice Co. Limited	May 29, 1906.	Sch. of rates
" H. of C. Motors for ventilation system.	Ahearn & Soper	May 22, 1906.	3,550 00
" " Ventilation system. Switchboard	Empire Elec. & Mfg. Co.	May 22, 1906.	387 00
" Rideau Hall. Conservatories.	The King Construct. Co.	June 13, 1906.	4,004 22
" New Conservatories	Doran & Devlin	June 12, 1906.	15,000 00
" P.O. Dead Letter Br. Metallic fittings.	Eclipse Manufacturing Co	May 31, 1906.	2,414 00
" West Block. Partition for Inland Revenue	Geo. Goodwin	June 20, 1905.	500 00
Paris. Post Office. Supply of coal.	Geo. E. Taylor.	Sept. 19, 1905.	128 38
Pembroke. " " Mackie & Ryan.	Sept. 15, 1905.	244 14	
" " New lock boxes.	P. Carmody	May 29, 1906.	470 00
Peterborough " Supply of coal.	Peterboro Fuel & Cart. Co	Sept. 16, 1905.	73 33
" " " C. A. Wilson & Co.	Sept. 14, 1905.	122 96	
" " Electric wiring.	F. I. R. Macpherson.	Nov. 3, 1905.	375 00
" Custom House. Alterat. and fittings	R. Sheehy	June 29, 1906.	397 00
Petrolia. Post Office. Supply of coal.	James E. Drake	Sept. 16, 1905.	184 21
Pieton. " " Lake & Killip.	Sept. 15, 1905.	214 50	
Port Arthur " " Louis Walsh Coal Co.	Sept. 15, 1905.	200 00	
Port Hope. " " Brown & Co.	Sept. 15, 1905.		
Prescott. " " James Buckley.	Sept. 14, 1905.	192 20	
" Custom House " James Buckley	Sept. 14, 1905.	99 00	
Rat Portage. Post Office. " Windatt & Co	Sept. 19, 1905.	275 43	
St. Catharines " " H. M. Rogers.	Sept. 9, 1905.	264 64	
" Drill Hall. Heating apparatus.	Sullivan & Langdon.	Aug. 24, 1905.	3,889 00
" " Fittings.	Sullivan & Langdon.	Dec. 27, 1905.	4,350 00
" " Armouies. Wiring	El. Const. Co. of London L.	Aug. 25, 1905.	2,792 50
St. Thomas. Post Office. Supply of coal.	W. H. Swift & Co.	Sept. 15, 1905.	312 00
" " Alterations, &c., &c.	John Purdon	Sept. 29, 1905.	8,347 00

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract	Amount,
PUBLIC BUILDINGS.— <i>Continued.</i>			\$ cts
Ontario.— <i>Concluded.</i>			
Sandwich, Post Office, Heating apparatus.....	Geo. A. Proctor	May 7, 1906	813 00
" " Sidewalks, grading & sodding.....	C. W. Cadwell.....	June 15, 1906	384 32
Sarnia, " Supply of coal.....	Wm. Shaw.....	Sept. 16, 1905	318 55
Sault Ste. Marie, " ".....	The Algoma Iron and Metal Co.	Oct. 31, 1905	547 50
" " & Customs. Fittings	McPhail, McCarty & Wright	Aug. 4, 1905	6,000 00
Smith's Falls, " Supply of coal.....	H. A. Crate	Sept. 16, 1905	183 60
Stratford, " ".....	Andrew Johnston.....	Aug. 21, 1906	331 54
" " Armory, Heating Apparatus.....	Nagle & Mills	Nov. 11, 1905	4,674 00
" " " Wiring and fixtures.....	"	Nov. 23, 1905	3,560 00
" " " Fittings, &c., &c.	D. Easson	April, 14, 1906	2,950 00
Stathroy, Post Office, Supply of coal.....	Alex. Reed.....	Sept. 15, 1905	169 54
" " " Repairs.....	Geo. McBeth.....	Oct. 25, 1905	975 00
Toronto, Post Office, Supply of coal.....	R. E. Clisdell.....	Sept. 25, 1905	
" " Custom House, ".....	"	" 25, 1905	
" " Ex-warehouse, ".....	"	" 25, 1905	
" " Revenue Office, ".....	"	" 25, 1905	
" " Drill Hall, Alterations to, &c.	Wickett Bros.	July 14, 1905	16,787 00
" " Construction of Postal station "F".....	Brown & Love	Aug. 5, 1905	86,112 00
" " Custom House, Alterations to.....	The Carlyle Construction Co., Ltd.	Sept. 7, 1905	29,769 00
" " Postal Pneumatic Tubesystem, Supply of 18,000 line ft. conduits.....	Standard Vitrified Conduits Co.	Sept. 8, 1905	3,950 00
" " Postal Pneumatic Tube system, Laying, etc., 18,000 ft. iron piping.....	The Canadian Pneumatic Tube Company, Limited	Oct. 20, 1905	123,000 00
" " Ex-Warehouse, Heating Apparatus.....	John Ritchie.....	Nov. 3, 1905	495 00
" " Postal Station "C," Repairs to Apparatus.....	John Ritchie Plumbing & Heating Co., Ltd.	Nov. 15, 1905	277 00
" " Custom House, Painting & Glazing.....	The Carlyle Construction Co., Ltd.	January 3, 1906	2,310 00
" " Drill Hall, Addition, etc., to, for Cavalry, Artillery, etc.	Sullivan & Langdon.....	April 18, 1906	218,894 00
" " Custom House, Heating Apparatus.....	Bennet & Wright Co.	June 23, 1906	1,446 00
Trenton, Post Office, Supply of Coal.....	J. Funnell.....	Sept. 16, 1905	204 00
Walkerton, " ".....	S. W. Vogan	Sept. 28, 1905	199 38
Windsor, " ".....	F. X. Scully.....	Sept. 15, 1905	469 60
" " " Repairs.....	Euc. Jacques.....	May 1, 1906	2,740 00
Wingham, Public Building, Heating Apparatus.....	Wm. Stevely & Son	March 28, 1906	1,185 00
Woodstock, Armory, ".....	Nagle & Mills	Nov. 10, 1905	4,870 00
" " " ".....	Electric wiring	Nov. 23, 1905	3,560 00
Manitoba.			
Brandon, Post Office, Supply of coal.....	Robert Purdon.....	Sept. 18, 1905	892 88
" " Imm. Building, ".....	"	" 18, 1905	132 70
" " Experm. Farm, ".....	"	" 18, 1905	229 25
" " Public Building, Painting, etc.	E. G. Daniels.....	March 9, 1906	473 95
Portage la Prairie, Pub. Building, Supply of coal.....	D. E. Adams.....	Sept. 15, 1905	246 15
Winnipeg, " Immigration Hall, ".....	"	" 15, 1905	1,789 40
" " Hospital, ".....	"	" 15, 1905	
" " Post Office, ".....	"	" 15, 1905	2,809 17
" " Custom House, ".....	"	" 15, 1905	661 01
" " Indian and Crown Timber Offices, Supply of coal.....	"	" 15, 1905	225 53
" " Examining Warehouse, Supply of coal.....	"	" 15, 1905	443 88
" " Imm. Building, Heating Apparatus.....	Cotter Bros.....	Oct. 25, 1905	9,000 00
" " " Iron Fence.....	Manitoba Anchor Wire Fence Co., Ltd.....	Oct. 16, 1905	2,672 00
" " " Nos. 1 and 2 Brick Veneering.....	J. McDiarmid Company.....	April 4, 1906	5,250 00

6-7 EDWARD VII., A. 1907

No. 1.—CONTRACTS let by the Department of Public Works, &c.—Continued.

Works.		Names of Contractors.	Date of Contract	Amount.
PUBLIC BUILDINGS—Continued.				\$ cts.
<i>Manitoba.—Concluded.</i>				
Winnipeg,	New Immigration Building, Wiring and fittings.....	The Hudson Electrical Supply Co.....	March 29, 1906.	4,430 00
"	Old Immig. Building, Painting..	Owen Davis & Son ..	May 12, 1906.	1,355 18
"	Military Store, Heating Apparatus	J. & J. McDiarmid.....	Feb. 14, 1906.	2,327 35
"	Electric wiring and fixtures	"	March 14, 1906.	512 50
<i>Alberta.</i>				
Calgary,	Immig. Shed, Supply of coal....	Charles S. Lott	Sept. 18, 1905.	62 01
"	Court House, "	"	" 18, 1905.	349 25
"	Post Office, additions to..	The Alberta Building Co., Limited	" 5, 1905.	77,000 00
"	Immig. Shed, Supply of coal....	D. E. Adams	" 15, 1905.	34 20
"	Post Office, "	"	" 15, 1905.	
"	Court House, "	"	" 15, 1905.	11 40
"	Registry Office, "	"	" 15, 1905.	
Canaduff,	Court House, "	Fairbairn Bros.	" 19, 1905.	103 75
Edmonton,	Dominion Land, "	Milner & Co.	" 21, 1905.	175 00
"	Court House, "	"	" 21, 1905.	52 50
"	Jail. Heating apparatus.	Chs. Mayes.	July 23, 1905.	4,604 00
"	" Wiring and fixtures.	"	Oct. 13, 1905.	1,150 00
"	" To fix Barriers at.	"	Dec. 22, 1905.	1,194 45
"	Construction of Immig. Building	Thos. Page	Dec. 26, 1905.	8,495 00
"	Jail. To fit up Heating apparatus.	Chs. Mayes.	May 14, 1906.	882 50
Lethbridge,	Post Office. Supply of Coal....	The Alberta Railway and Irrigation Co.	Sept. 21, 1905.	67 00
"	Immig. Building. "	The Alberta Railway and Irrigation Co.	Sept. 21, 1905.	39 00
McLeod,	Court House. "	Chs. S. Lott.	Sept. 18, 1905.	162 75
"	Custom House. "	"	" 18, 1905.	162 75
"	Custom House. "	D. E. Adams.	" 15, 1905.	
"	Court House. "	"	" 15, 1905.	
Medicine Hat,	Construction of a Post Office Building, &c.	H. K. Oakes & J. D. Everard	April 3, 1906.	25,550 00
Red Deer,	Dominion Land. Supply of Coal....	Chs. S. Lott	Sept. 18, 1905.	
"	Court House. "	Chs. S. Lott.	" 18, 1905.	
<i>Saskatchewan.</i>				
Indian Head	Experimental Farm. Supply of Coal.	Whitmore Bros.	Sept. 20, 1905.	
"	Forest Nursery Station. "	"	" 20, 1905.	
"	" " "	James Conn.	Oct. 7, 1905.	140 98
"	" " "	"	" 7, 1906.	
Moose Jaw,	Public Building. Heating apparatus.	Moose Jaw Hardware Co.	Feb. 20, 1906.	1,995 00
"	" Wiring.....	J. E. Ashworth.....	March 20, 1906.	675 00
"	" Fittings.....	Fat. Navin.....	March 28, 1906.	5,000 00
"	" Fences, concrete sidewalk, &c....	"	April 5, 1906.	1,575 00
Moosomin,	Court House. Supply of Coal....	Whitmore Bros.	Sept. 20, 1905.	213 95
"	" " "	F. H. Bristow	" 26, 1905.	
Prince Albert,	Public Build'g. Heating apparatus	Chs. LeMoine & Co.	Jan. 17, 1906.	4,995 00
"	" Concrete sidewalks.	"	Oct. 20, 1905.	867 50
Prince Albert,	Public Building. Fittings.....	"	March 14, 1906.	4,850 00
"	" Electric Light.	R. Cook	" 12, 1906.	2,281 00
Regina,	Construction of a Post Office, build'g, &c.	Snyder Bros.	" 20, 1906.	162,362 00
"	Court House. Supply of Coal....	Whitmore Bros.	Sept. 20, 1905.	655 12
"	Post Office. "	"	" 20, 1905.	264 82
"	Dominion Land Office. "	"	" 20, 1905.	380 00
"	Court House. "	D. E. Adams.....	" 15, 1905.	
"	Post Office. "	"	" 15, 1905.	
"	Dominion Land. "	"	" 15, 1905.	
Wolsely,	Court House. "	Magee & Thompson.....	" 27, 1905.	279 50
Yorkton,	" "	D. F. Adams.....	" 15, 1905.	
"	Immigration Building. "	"	" 15, 1905.	204 30

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract	Amount.
PUBLIC BUILDINGS—<i>Concluded.</i>			\$ cts.
<i>British Columbia.</i>			
New Westminster. Construction of a Public Building for Marine and Fisheries and Indian Affairs.....	R. Buckland & J. C. Smith	Nov. 30, 1905.	13,812 00
Rosland. Armoury fittings.....	W. G. Gillett.....	Oct. 12, 1905.	597 00
Vancouver. Post Office, &c, Building.....	Kelly Bros. Mitchell Ltd	Jan. 16, 1906.	434,500 00
HARBOURS AND RIVERS.			
<i>Nova Scotia.</i>			
Apple River, Construction of a Breakwater.....	J. E. & H. Bigelow.....	March 27, 1906.	7,300 00
Bear Cove " Pub. Breakwater.....	E. R. Read.....	Oct. 10, 1905.	5,748 92
Boisdale " wharf.....	Reid & Archibald.....	March 15, 1906.	4,995 00
Drum Head " of an Extension to Breakwater.....	Reid & Archibald.....	April 4, 1906.	5,460 00
Ekasoni. Pile wharf.....	Thomas D. Morrison.....	May 8, 1906.	2,875 00
Grand narrows Removal of Cribwork, etc., etc.....	Rory McNeil.....	March 6, 1906.	900 00
Half Island' Construction of Breakwater.....	W. Suttis & C. Anderson	April 25, 1906.	6,727 00
Kelly's Cove " ".....	J. E. & H. Bigelow.....	March 27, 1906.	7,700 00
Malagash " Public Wharf.....	J. B. Robertson.....	June 5, 1906.	3,447 00
Mill Cove " Breakwater.....	A. W. Girroir.....	Aug. 28, 1905.	19,800 00
New Campbellton " Works to wharf, etc.....	Hugh McDonald.....	Sept. 30, 1905.	17,000 00
Parker's Cove " Breakwater.....	Thurston, Thurston & Durkee.....	May 28, 1906.	7,100 00
Parrsboro " Lighters and excavation of channel.....	Hugh McDonald.....	June 23, 1906.	27,950 00
Pleasant Bay, Construction of wharf.....	W. J. Landry & F. R. Irish.....	Jan. 29, 1906.	7,500 00
Pugwash " ".....	Elliott & Co.....	April 23, 1906.	11,496 00
West Arichat " Public Wharf and approach.....	Thomas D. Morrison.....	Aug. 28, 1905.	5,275 00
<i>Prince Edward Island.</i>			
Miminegash. Construction of Block to Southern Breakwater.....	Andrew Martin.....	Dec. 12, 1905.	2,375 00
Rustico Harbour, Construction of Breakwater—West End of Robinson's Island.....	Geo. Matheson.....	July 4, 1905.	13,275 00
St. Peter's Bay (Harbour), Construction of Breakwater.....	L. H. Lachance & P. Kennedy.....	Aug. 30, 1905.	12,750 00
Summerside (Indian Head), Construction of Breakwater.....	Heney & Smith.....	Feb. 7, 1906.	133,942 00
Tignish, Construction of new block—outer end of Breakwater.....	J. H. & E. M. Myrick.....	July 4, 1905.	3,436 50
<i>New Brunswick.</i>			
Campbellton, Construction of wharf.....	Wm. Glover.....	Feb. 28, 1906.	16,495 00
Durham " ".....	J. & A. Culligan.....	Oct. 23, 1905.	17,700 00
Great Salmon River, Construction of Breakwater.....	Wm. R. Fawcett.....	July 27, 1905.	3,900 00
Richibucto, Construction of Extension to Breakwater.....	John Jardine.....	Nov. 16, 1905.	17,000 00
Sandpoint Slip, St. John,—Dredging.....	G. S. Mayes.....	Sept. 30, 1905.	Sch'd of rat's
Shippegan, Construction of Public Wharf.....	Thomas P. Charleson.....	Dec. 29, 1905.	15,940 00
<i>Quebec.</i>			
Batiscan River, Dredging.....	The W. J. Poupore Co. Ltd.....	July 27, 1905.	Sch. of rates.
Berthierville " ".....	Canada Improvement Co.....	Sept. 5, 1905.	" "
Blanche Shoals " ".....	The T. F. Moore Co.....	July 25, 1905.	" "
Bryson. Highway Bridge,—New approaches and repairs to.....	Edward Conroy.....	Sept. 5, 1905.	14,000 00

6-7 EDWARD VII., A. 1907

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
HARBOURS AND RIVERS— <i>Continued.</i>			\$ cts.
<i>Quebec.</i>			
Chateauguay, Dredging.....	L. Cohen & Son.....	July 18, 1905.	Sch. of rates.
Chicoutimi, (District). Supply of B. C. Fir for Slides and Booms.....	Ottawa Lumber Co.....	Aug. 18, 1905.	3,815 00
Como, Dredging.....	L. Cohen & Son.....	July 18, 1905.	Sch. of rates.
Doucet's Landing, Dredging.....	Randolph Macdonald.....	Aug. 18, 1905.	" "
Godefroye River, Construction of Landing Pier.....	John O'Shaughnessy.....	June 11, 1906.	4,200 00
Graham, Dredging.....	The General Construction Co.....	July 27, 1905.	Sch'd of rat's
Hakwesbury ".....	L. Cohen & Son.....	" 18, 1905.	" "
Hudson Wharf, Dredging.....	The General Construction Co.....	June 7, 1906.	" "
Laprairie, Concrete protection walls.....	Amiot & Lemay.....	Dec. 9, 1905.	13,500 00
L'Assomption, Dredging.....	The General Construction Co.....	July 27, 1905.	Sch. of rates.
Louiseville ".....	Randolph Macdonald.....	Aug. 8, 1905.	" "
Marsouins, Construction of a wharf, at.....	Cloutier & Gendreau.....	June 25, 1906.	4,800 00
New Carlisle, Extension to wharf.....	Heney & Smith.....	July 20, 1905.	20,690 00
Nicolet, Dredging.....	Randolph Macdonald.....	Aug. 8, 1905.	Sch. of rates.
Peel Head Bay, Construction of Landing Pier.....	J. J. Fallon.....	Dec. 2, 1905.	10,399 00
Quebec Harbour, Dredging.....	Dussault & Lemieux.....	July 19, 1905.	Sch. of rates.
" " Extension to wharf.....	" ".....	Aug. 23, 1905.	164,704 20
" " ".....	" ".....	March 30, 1906.	167,042 87
Rigaud, Dredging.....	L. Cohen & Son.....	July 18, 1905.	Sch. of rates.
River Jesus, Dredging.....	The General Construction Co.....	June 7, 1906.	" "
" " ".....	Canada Improvement Co.....	Sept. 5, 1905.	" "
Rivière Ouelle, construction of a spur to wharf.....	G. St. Pierre & Co.....	Jan. 5, 1906.	7,745 00
St. Andrews, dredging.....	L. Cohen & Son.....	July 20, 1905.	Sch. of rates.
St. Francis River, dredging.....	The General Construction Co.....	Aug. 30, 1905.	"
St. Maurice River ".....	The W. J. Poupore Co., Ltd.....	July 27, 1905.	"
<i>Ontario.</i>			
Amherstburg, dredging.....	Weddell Dredging Co.....	Oct. 27, 1905.	"
Belle River ".....	Chatham Dredging & Construction Co., Ltd.....	Aug. 14, 1905.	"
Collingwood (Harbour) dredging.....	C. S. Boone.....	July 27, 1905.	"
" construction of a wharf.....	Joseph Battle.....	Aug. 25, 1905.	29,900 00
Fesserton, dredging.....	Owen Sound Dredge & Construction Co., Ltd.....	June 5, 1906.	Sched. of rat.
Goderich ".....	W. L. Horton.....	June 2, 1906.	"
Hamilton, construction of a wharf.....	A. A. McDonald.....	April 20, 1906.	71,000 00
Kaministiquia River, dredging.....	A. F. Bowman.....	July 13, 1905.	Sched. of rat.
Kaministiquia River (Fort William), dredging.....	Great Lakes Dredging Co., Ltd.....	June 27, 1906.	"
Kincardine Harbour, dredging.....	The Marlton Dredging Co.....	Aug. 4, 1905.	"
Matchedash Bay ".....	H. W. Prendergast.....	Aug. 8, 1905.	"
Meaford ".....	R. Weddell, Manley & Weddell.....	June 22, 1906.	"
Midland, dredging Gr. Trunk Ry. Co's Elevator.....	Owen Sound Dredge & Construction Co., Ltd.....	June 5, 1906.	"
" " at the Elevator.....	Owen Sound Dredge & Construction Co., Ltd.....	Nov. 14, 1905.	"
" " near the Coal Docks.....	Owen Sound Dredge & Construction Co., Ltd.....	Dec. 11, 1905.	"
Mission River (Fort William), dredging.....	Great Lakes Dredging Co., Ltd.....	June 27, 1906.	"
Nigger Island, dredging.....	R. Weddell, Manley & Weddell.....	June 22, 1906.	"
Owen Sound ".....	A. F. Bowman.....	June 27, 1906.	"
" " ".....	A. F. Bowman.....	Aug. 7, 1905.	"

SESSIONAL PAPER No. 19

No. 1—CONTRACTS let by the Department of Public Works, &c.—*Concluded.*

Works.	Names of Contractors.	Date of Contract.	Amount.
HARBOURS AND RIVERS—<i>Concluded.</i>			\$ cts.
<i>Ontario—Concluded.</i>			
Penetanguishene dredging.....	A. F. Bowman	June 27, 1906.	"
Penetanguishene (Harbour), dredging.....	The Owen Sound Dredge & Constr. Co., Ltd.	Aug. 19, 1905.	"
Point Edward, dredging.....	Dominion Dredging & Construction Co.	June 4, 1906.	"
" " River St. Clair	The Sarnia Bay Lumber, Timber & Salt Co., Ltd.	Aug. 7, 1905.	"
Port Arthur Harbour, dredging.....	A. F. Bowman	July 13, 1905.	"
Port Burwell, construction of breakwater and dredging	M. J. Haney & R. Miller.	April 6, 1906.	72,500 00
Port Burwell, dredging	The Dominion Dredging & Construction Co.	July 21, 1905.	Sch. of rates.
" "	The Manley Co.	June 8, 1906.	"
Port Colborne, supply of stones for breakwater at.	M. J. Hogan.	Sept. 30, 1905.	39,000 00
Port Elgin, dredging	Marlton Dredging Co.	June 4, 1906.	Sch. of rates.
Port Stanley "	The Manley Co.	June 8, 1906.	"
" construction of two breakwaters.....	M. J. Haney & R. Miller.	July 20, 1905.	105,828 00
" Harbour, dredging	C. S. Boone.	July 27, 1905.	Sch. of rates.
River Thames (mouth of) "	C. S. Boone.	June 8, 1906.	"
Rondeau Harbour, dredging	C. S. Boone.	June 8, 1906.	"
" "	Manley & Co.	Oct. 5, 1905.	"
" construction of two breakwaters.....	M. J. Haney & R. Miller.	April 6, 1906.	110,000 00
" dredging	W. Davis & Sons.	Aug. 16, 1905.	Sch. of rates.
Sarnia, dredging at River St. Clair.....	The Sarnia Bay Lumber, Timber & Salt Co., Ltd.	Aug. 7, 1905.	"
Saugeen River, dredging	A. F. Bowman	Aug. 7, 1905.	Sch. of rates.
Thornbury "	H. W. Prendergast.	Aug. 8, 1905.	"
Toronto Island, extension to breakwater.....	M. J. Haney	Sept. 5, 1905.	49,000 00
Trenton, dredging	The Weddell Dredging Co.	Aug. 5, 1905.	Sch. of rates.
" "	R. Weddell, Manley & Weddell.	June 22, 1906.	"
Warton "	A. F. Bowman	Aug. 24, 1905.	"
<i>Manitoba.</i>			
Shellmouth River, concrete piers and abutments for a highway bridge across Assiniboine River.	J. McDiarmid Co.	May 9, 1906.	16,596 00
VESSELS, DREDGES AND PLANT.			
Construction of a snag boat for Manitoba.....	The Polson Iron Works	July 5, 1905.	30,000 00
" of two steel hopper barges for salt water service	Estate James Fleming.	" 14, 1905.	20,960 00
Construction of works to dredge 'International'	F. X. Drolet.	" 3, 1906.	1,921 00
" of steel stone lifter	John Inglis Co., Ltd.	April 3, 1906.	36,985 00
Repairs and fitting boiler dredge 'St. Lawrence'.	The Pictou Foundry & Machine Co.	May 1, 1906.	2,895 00
Construction of two steel hopper barges.....	Estate James Fleming.	" 14, 1906.	21,600 00
" "	New Burrell Johnson Iron Co. Ltd.	" 14, 1906.	25,000 00
" "	I. Matheson & Co. Ltd.	June 25, 1906.	23,500 00
" of a 5 yard dipper dredge for British Columbia	The Polson Iron Works, Ltd.	" 22, 1906.	98,000 00
TELEGRAPHS.			
Crane Island, &c., B.C.—Supply of sub-marine telegraph cables	Watson Jack & Co.	July 20, 1905.	6,485 00
Bay St. Lawrence, N.S. Construction of a telegraph office	P. L. Macfarlane.	Aug. 18, 1905.	2,400 00
Bersimis, P.Q. Construction of a telegraph office.	Tremblay, Côté & Boivin	Oct. 18, 1905.	3,025 00

* Contract transferred to Manley & Co.

6-7 EDWARD VII., A. 1907

No. 2.—STATEMENT of properties purchased by the Department of Public Works during the fiscal year ended June 30, 1906.

Date of Conveyance.	Vendors.	Purchasers.	Description of property.	For what Purpose.	Area.	Price.
						\$ cts.
July 1905.						
July	Wm. Price.	His Majesty.	River front lots 41a, 41b, 43, 44, 1st. Range, Jonquiere Township, Chicoutimi Co. Transfer.	Slides and booms		Period of 20 yrs \$800.00 per ann.
"	Wm. Price.	"	Sale of part of Lot No. 9 C, Township Simard, Chicoutimi, P.Q.	For wharf	9 ac. more or less	1,100 00
"	E. C. Munroe.	"	Lot of land, White Haven, N. S.	"	21,758 sq. ft.	100 00
"	Hugh M. Gall.	"	Land at Lachute, P.Q.	Public Building.		1,200 00
"	Hudson's Bay Company	"	Lot No. 3, Block 2, Athabaska Landing, Alta.	Telegraph		100 00
"	Corporation of Parry Sound	"	Land at Parry Sound, Ont.	Wharf	4½ acre	1 00
"	W. W. Tuttle.	"	Lots 11, 12, Block 10, Fernie, B.C.	Public Building		5,000 00
Aug.	His Majesty	Municipality of Maple Creek.	Grant of Lot 17, Block 9, Maple Creek, Sask.	"		50 00
"	Corporation Presbyterian Church.	His Majesty	Lots Nos. 1, 2, 3, Block 306, Regina Sask.	"		10,000 00
"	His Majesty	J. E. Tremblay.	Old Telegraph Office, Pointe aux Esquimaux, P.Q.	Private enterprise.		40 00
Sept.	Flora Cunningham.	His Majesty	Land at Cunningham's Point, N.S.	Wharf	18½ superficial ft.	25 00
"	Rev. P. Charles Armand	"	Land at Bersimis, P.Q.	Public Building.	82 x 90 ft.	200 00
"	The Kilburn Real Estate Co.	"	Part of Lot 7, W. Side Scrope St., Owen Sound, Ont.	"		10,150 00
"	C. E. Whelan <i>et al.</i>	"	Lot No. 1, St. Mary's, Ont.	"	6,025 sq. ft.	2,300 00
"	John Rogers and wife.	"	Part of Lot 20, Holland Landing, Ont.	Wharf	1½ acre	500 00
"	John Rogers and wife.	"	Part of Lot 7, Bradford, Ont.	Right of way	1½ acre	1 00
"	Thomas Carley <i>et al.</i>	"	Land, Township of Dalton, Mud Lake, Ont.	Improvements	1½ acres	100 00
Oct.	Mrs. Josephine Germain <i>et al.</i>	"	Lands at Chateau Richer, P.Q.	Government purposes.		600 00
"	D. R. Dingwall.	"	Lots 15, 16 Winnipeg, Man.	Postal Station.		15,709 50
"	Geo. McDonald.	"	Land at Harrigan's Cove, N.S.	Wharf	80 x 20 ft.	1 00
Nov.	M. Nolan <i>et ux.</i>	"	Land at Glace Bay, N.S.	Public Building.	60 x 100 ft.	6,600 00
"	H. E. McDonald.	"	Land at Harrigan's Cove, N.S.	Wharf	1½ acre	5 00
"	His Majesty	Town of Terrebonne.	Portions of Lot 228, Terrebonne, P.Q.	Public Building		Free grant.
"	Geo. Taylor <i>et ux.</i>	His Majesty	Land at Port Beekerton, N.S.	Approach to wharf	3½ acre	175 00
"	E. C. Whitman, <i>et al.</i>	"	Land at Canso, N.S.	Public Building.	7,600 sq. ft.	1,000 00
"	R. E. McNeil and ux.	"	Land at Bay St. Lawrence, N.S.	Telegraph Office	2 acres	50 00
Dec.	C. R. Pettipher	"	Sale of building, North Bay, Ont.	Public Building		420 00
"	A. Fellerin.	"	Land west part lot 31, Canton Fabre, P.Q.	"		Free grant.
"	A. J. Henderson.	"	Part of Lot 16, 7th Cove, Baysville, Ont.	Approach to wharf	½ acre	1 00
"	P. O'Hanley <i>et ux.</i>	"	Land at Boisdale, N.S.	Wharf	1½ acre	50 00
"	Geo. Viel	"	Land at Longue Pointe de Mingan, P.Q.	Telegraph Office.	9½ acres	1,200 00

SESSIONAL PAPER No. 19

1901.	15 Jan.	4 F. Richter.	Part of Lot 30, Township 39, O'Soycos, B.C.	Custom House.	3 an acre.	200 00
	"	6 W. A. Patterson	Land at Tatamagouche, N.S.	Right of way.	"	500 00
	"	11 J. K. McKenzie.	Lots 145, 146, Selkirk, Man.	Public Building.	"	2,000 00
	"	17 J. C. Bourgeois.	Lots 800 and 802, St. Boniface, Man.	"	"	4,500 00
	Feb.	5 James C. Betts & ux.	Land at Malagaash, N.S.	For wharf.	0.448 rods	20 00
	"	7 Town of Campbellton, N.B.	Land at Campbellton, N.B.	Approach to wharf.	1 1/2 acre	1 00
	"	14 E. T. Brown.	Land between Pub. Road and above at Ekkaesoni, N.S.	For wharf.	7,491 sq. ft.	1 00
	"	16 Neil Campbell & ux.	Land at Panmure Island, P.R.I.	"	2 1/2 acres.	150 00
	"	17 City of Halifax, N.S.	Sale of "Jail property" Halifax, N.S.	Detention Hospital.	"	300 00
	"	19 J. N. Pugsley & ux.	Land at Truro, N.S.	Armoury.	3 1/2 acres.	5,000 00
	"	20 William Frung & Co. Ltd.	Water lot, Shippigan, N.B.	Wharf.	1 1/2 acre	200 00
March	3	H. V. Fieldhouse.	Lots 14, 15, 16, Block Neepawa, Man.	Public Building.	"	3,000 00
"	"	5 Alfred Grenier.	Part of Lot 3044, Palace Ward, Quebec.	Military grounds.	"	3,000 00
"	"	5 Margaret F. Martell.	Lot No. 2, Main & Dieu, N.S.	Breakwater.	1,220 sup. al. ft.	21 00
"	"	22 Corporation of Irberville.	Cadastral lot No. 203 S.E. Corner of Morley and Market, Irberville, P.Q.	Post Office Building.	"	Free grant.
April	"	24 Wm. B. Burrill & ux.	Lands at Brantford, Ont.	Parade grounds.	3 acres.	5,000 00
"	"	5 His Majesty.	Sale of "V" property, London, Ont.	Private enterprise.	"	1,900 00
"	"	18 Provincial Gov't. of Quebec.	Beech lot, River du Sud Montagny, P.Q.	Wharf.	80,943 sup. al. ft.	176 00
"	"	24 His Majesty.	Lots 30, 31, 32, block 152, Saskatoon, Sask.	Public Building.	"	2,000 00
"	"	30 Nathan Stark & ux.	Land at Broad Cove (Culoden) N.S.	Breakwater.	1 1/2 acre	1 00
May	"	4 John B. McLellan	Land Block 9, lot 77, Inverness, N.S.	Public Building.	"	700 00
"	"	4 V. B. McLellan.	Land block 9, lot 80, Inverness, N.S.	"	"	400 00
"	"	4 A. J. Boyd & ux.	Land Bourgeois Inlet, N.S.	Wharfage accommod'n.	4,410 sup. ft.	1,000 00
"	"	21 His Majesty.	Marine Hospital lot, Charlottetown, P.E.I.	Private enterprise.	"	580 00
"	"	30 G. Albert & wife.	Land, Caracquet, N.B.	Wharf.	1 1/2 acre	200 00
"	"	30 J. A. Albert & wife.	" at Caracquet, N.B.	"	1 1/2 acre	50 00
"	"	30 C. E. Kaulbeck.	" at Feltzen-South, N.S., lot No. 3, wharf	"	300 sq. yds.	20 29
"	"	30 Henry Lohnes & ux.	" " " " 2	"	2,016 sq. ft.	19 85
"	"	30 Nathan Corkum & ux.	" " " " 4	"	2,070 sq. ft.	17 47
"	"	30 David Moesser & ux.	" " " " 5	"	4,800 sq. ft.	15 88
"	"	31 Freeman Moesser & ux.	" " " " 1	"	10,134 sq. ft.	88 38
"	"	31 Wm. Moesser & ux.	" " " " 6	"	4,600 sq. ft.	38 53
June	"	8 R. H. Scougall.	" at Marsoui, P.Q.	"	"	1 00
"	"	14 Desiré Rousseau.	Lot of land, Lambton, Beauce, P.Q.	"	13,125 sq. ft.	200 00
"	"	16 Alex. K. McKenzie.	Land at Nyanza, N.S.	"	17,304 sq. ft.	300 00
"	"	18 James D'Halewyn.	Lot 35, Canton L'Angeur, Nominiguing, P.Q.	Innmg. Building.	"	300 00
"	"	29 Alex. Macdonald.	Lot and water lots, Baddeck, N.S.	Wharf.	"	3,000 00
"	"	30 Donald McAulay & ux.	Land, Jersey Cove, N.S.	"	1 acre	25 00

6-7 EDWARD VII., A. 1907

No. 3.—STATEMENT of properties leased to and by the Department of Public Works during the Fiscal Year ended June 30th, 1906.

Date of Lease.	Lessor.	Lessee.	Property Leased.	For what Purpose.	Duration of Lease.	Annual Rental.
1906.						\$ cts.
July 1	* A. Franklin & Sons.	His Majesty	Message Nos. 8 & 10, Elizabeth St., Toronto, Ont.	For automobiles	1 year	144 00 p. annum.
" 1	R. A. G. Bell	"	Lease of 3 rooms, Calgary, Alta.	For inspector	1 "	420 00 "
" 1	His Majesty	A. J. Green	Lease brick building, Windsor, Ont.	For private enterprise	3 years	100 00 "
Aug. 7	Joseph Prince	His Majesty	Lease of building, Battleford, Sask.	Immig. purposes	During pleasure.	100 00 per mo.
" 11	Great North Western Telegraph Company	"	First flat building, Metcalfe St., Ottawa.	Militia purposes	5 years	500 00 p. annum.
" 11	" " "	"	Second floor building, Metcalfe St., Ottawa	Labour Department	5 "	560 00 "
" 14	Heintzman & Co., Ltd.	"	Message 117 King St., Toronto, Ont.	Postal station 'B'	5 "	1,000 00 "
" 25	His Majesty	H. A. Trudel	Gov't Reserve, Pond Creek, Hull, P.Q.	Private enterprise	During pleasure.	1 00 "
" 30	Jas. W. Woods	His Majesty	Building, S. side, Slater St., Ottawa	Militia Department	5 years	11,040 00 "
" 30	Jas. W. Woods	"	Fifth story, S. side, Slater St., Ottawa	" "	8 "	3,687 20 "
Oct. 1	Canadian Pac. Ry. Co.	"	Room, Can. Pac. Ry. Co's. Station, Winnipeg, Man.	Postal station 'A'	2 "	2,050 00 "
" 2	Elzéar Savard	"	Land, River St. Charles, P.Q., 115 x 130 ft.	Immig. purposes	5 "	50 00 "
" 21	The Molson's Bank	"	First & second flats, building, Metcalfe St., Ottawa	Labour Department	4 "	1,200 00 "
Nov. 8	Calgary Wine Company	"	Premises 'Land Office,' Calgary, Alta.	Government purposes	During pleasure	75 00 per mo.
Dec. 4	His Majesty	The Pembroke Elect. Lt. Co.	Portion of Government reserve, High Falls, Black River, P.Q.	Private enterprise	25 years	25 00 p. annum.
" 6	Mrs. C. McCall	His Majesty	Message No. 172, Green Ave. Montreal.	Letter carriers	2 "	600 00 "
" 20	His Majesty	J. H. Dansereau	Isle Caron, River St. Maurice, P.Q.	Saw mill	25 "	75 00 "
1906.						
Jan. 7	Nap. Bélanger	His Majesty	Lease of building at Montmagny, P.Q.	Post office	1 year	276 00 p. annum.
Mar. 1	V. Majéka	"	Lease of building at Metaskiwin, Alta.	Immig. purposes	9 months	10 00 per mo.
" 1	C. T. Daykin	"	Upper floor of a warehouse, Lacombe, Alta.	" "	10 "	13 00 "
" 1	J. B. Griffith	"	Upper story of building at Stettler, Alta.	" "	9 "	20 00 "
" 15	E. W. Day	"	Building at Daysland, Alta.	" "	9 "	108 00 whole period.
April 1	R. Dittick	"	Building at Leduc, Alta.	" "	7 "	10 00 per mo.
" 10	His Majesty	Toronto & Niagara Power Co.	Privilege for steel towers, Burlington Canal, Ont.	Private enterprises	During pleasure.	1 00 "

SESSIONAL PAPER No. 19

May	1 The Hamilton Company	His Majesty	Building, St. Catharines St., Montreal P.Q.	Postal station 'B'	2 years	1,700 00 1st year. 1,800 00 2nd "
"	7 Thos. Meredith	"	Building at Yorkton, Sask.	Domin. Lands Office	During pleasure.	50 00 per mo.
"	10 Grand Trunk Railway Co.	"	Lot 48, S.W. corner Lorne & Front Sts., Toronto.	Post office purpose	"	200 00 "

* Cancelled on 31st January, 1906.

J. A. CHASSE,
*Law Clerk.*DEPARTMENT OF PUBLIC WORKS,
OTTAWA, Nov. 1, 1906.

LIST

OF SOME OF THE

ACTS OF PARLIAMENT

PASSED AT THE SESSION OF 1906

HAVING REFERENCE TO THE

DEPARTMENT OF PUBLIC WORKS OR WORKS UNDER ITS CHARGE.

LIST of some of the Public Acts of the Parliament of Canada, passed at the Second Session of the Tenth Parliament, closed by Prorogation on the thirteenth day of July, 1906, and having reference to the Public Works Department or works under its charge (6 Edward VII.)

Subject.	Full title of the Statute.	Chapter.	Page in Statute Book.
Sums granted to His Majesty for the financial year ending June 30, 1906, and the period of nine months ending March 31, 1907, and the purpose for which they are granted.	An Act for granting to His Majesty certain sums of money for the public service of the financial year ending June 30, 1906, and the period of nine months ending March 31, 1907.	3	7
What period public accounts shall include.	An Act respecting the Fiscal year.	12	83
Advance for completion of Louise embankment.	An Act respecting the Quebec Harbour Commissioners.	41	221
Certain road allowances transferred to provinces.	An Act respecting roads and road allowances in the Provinces of Saskatchewan and Alberta.	45	253

N.B.—By Proclamation dated March 21, 1906, rules and regulations were made for the management, maintenance, proper use and protection of the Government booms and other works constructed to facilitate the transmission of timber, lumber, pulp, logs and saw logs on the River Saguenay, P. Q., and its tributaries.

Vide Canada Gazette. Vol. XXXIX, p. 2106.

J. A. CHASSÉ,
Law Clerk.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, November 1, 1906.

NATIONAL ART GALLERY

CURATOR'S REPORT

FOR THE FISCAL YEAR ENDED JUNE 30, 1906

NATIONAL ART GALLERY.

FRED GÉLINAS, Esq.,
Secretary, Department of Public Works,
Ottawa.

SIR,—I have the honour to report that the following additions, by purchase, were made to the National Art Collection during the fiscal year ended June 30, 1906.

Painting—

'The Painting,' by Paul Peel, for one thousand dollars (\$1,000).

'Devotion,' by Paul Peel, for one thousand dollars (\$1,000).

Painting by Harlarnoff for twelve hundred dollars (\$1,200).

'Turned out of the Herd,' by Verner, for three hundred and fifty dollars (\$350).

'A Misty Morning,' by Verner, for one hundred and fifty dollars (\$150).

'An Interesting Story,' by F. Brownell, for one hundred and twenty-five dollars (\$125).

Sculpture—

Group 'Jeunes indiens chassant' by Alfred Laliberté, for eight hundred dollars (\$800).

14,000 visitors registered during the year.

I have the honour to be, sir,
Your obedient servant,

WALTER R. BILLINGS,
Acting Curator National Art Gallery.

OTTAWA, November 26, 1906.

NAMES OF THE CHIEF OFFICERS
OF THE
DEPARTMENT OF PUBLIC WORKS
WITH
DATES OF APPOINTMENT, ETC., FROM 1841 TO 1906.

NAMES OF THE CHIEF OFFICERS.

The names with the dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1906.

Names.	Capacity or Office.	Date of Appointment.			
		Served.			
		From		To	
<i>Under Statute 4-5 Vic., Chap. 38.</i>					
CORPORATION BOARD OF WORKS.					
Killaly, Hon. H. H.	Chairman.....	Dec.	29, 1841	Oct.	3, 1844
Daly, Hon. D.					
Harrison, S. B.	Members.....				
Sullivan, R. B.					
Davidson, J., Esq.	Secretary.....	Aug.	17, 1841		
Begly, Thomas A.	Chief Engineer.....	"	17, 1841		
Keefer, Samuel.....	Architect and Assistant Chief Engineer.....	Dec.	15, 1841		
Rubidge, F. B.					
NEW BOARD OF WORKS.					
Killaly, Hon. H. H.	Chairman.....	Oct.	4, 1844	June	8, 1846
Daly, Hon. D.					
Draper, Hon. W. H.	Members.....				
Morris, Hon. W.					
Papineau, Hon. D. B.					
<i>Under Statute 9th Vic., Cap. 37, &c.</i>					
Robinson, Hon. W. B.	Chief Commissioner.....	June	22, 1846	March	10, 1848
Taché, Hon. E. P.	"	March	11, 1848	Nov.	26, 1849
Chabot, Hon. J.	"	Dec.	13, 1849	March	31, 1850
Merritt, Hon. W. H.	"	April	8, 1850	Feb.	11, 1851
Bourret, Hon. J.	"	Feb.	12, 1851	Oct.	27, 1851
Young, Hon. John.....	"	Oct.	28, 1851	Sept.	22, 1852
Chabot, Hon. J.	"	Sept.	23, 1852	Jan.	26, 1855
Lemieux, Hon. F.	"	Jan.	27, 1855	Nov.	25, 1857
Alley, Hon. C.	"	Nov.	26, 1857	Aug.	1, 1858
Holton, Hon. L. H.	"	August	2, 1858	"	6, 1858
Sicotte, Hon. L. V.	"	"	7, 1858	Jan.	10, 1859
Rose, Hon. John.....	"	Jan.	11, 1859	June	12, 1861
Cauchon, Hon. Jos.	Commissioner.....	June	13, 1861	May	23, 1862
Tessier, Hon. U. J.	"	May	24, 1862	"	27, 1863
Drummond, Hon. L. T.	"	"	28, 1863	July	23, 1863
Laframboise, Hon. M.	"	July	24, 1863	March	29, 1864
Chapais, J. C.	"	March	30, 1864	June	30, 1867
Casgrain, Hon. Chas. Eus.	Second commissioner.....	July	9, 1846	Feb.	29, 1848
Cameron, Hon. M.	Assistant Commissioner.....	March	11, 1848	"	1, 1850
Wettenhall, James, Esq.	"	Feb.	2, 1850	April	16, 1850
Bourret, Hon. Jos.	"	April	17, 1850	Feb.	11, 1851
Killaly, Hon. H. H.	"	Feb.	12, 1851	May	6, 1859
Keefer, Samuel.....	Deputy Commissioner.....	May	6, 1859	March	7, 1864
Trudeau, Toussaint	"	March	8, 1864	May	29, 1868
Begley, Thos. A.	Secretary.....	Feb.	10, 1841	Oct.	31, 1858
Trudeau, Toussaint	"	Dec.	13, 1859	March	7, 1864
Braun, Frederick.....	"	March	8, 1864	July	1, 1867
Page, John	Chief Engineer.....	Oct.	31, 1873	Oct.	1, 1879

6-7 EDWARD VII., A. 1907

The names with the dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1904.—*Continued.*

Names.	Capacity or Office.	Date of Appointment.			
		Served.			
		From		To	
<i>Under Statute 31 Vic., Chap. 12.</i>					
McDougall, Hon. Wm	Minister	July	1, 1867	Dec	7, 1869
Langevin, C.B., Hon. Hector L	"	Dec.	8, 1869	Nov.	6, 1873
Mackenzie, Hon. Alexander	"	Nov.	7, 1873	Oct.	16, 1878
Tupper, C.B., K.C.M.G., Sir Charles	"	Oct.	17, 1878	May	19, 1879
Langevin, C.B., K.C.M.G., Sir Hector L.	"	May	20, 1879	Aug.	11, 1891
Smith, Hon. Frank	Acting Minister	Aug.	14, 1891	Jan.	10, 1892
Ouinet, Hon. Joseph Aldéric	Minister	Jan.	11, 1892	April	30, 1896
Desjardins, Hon. Alphonse	"	May	1, 1896	July	12, 1896
Tarte, Hon. J. Israël	"	July	13, 1896	Oct.	21, 1902
Sutherland, Hon. James	"	Nov.	11, 1902	May	3, 1906
Hyman, Hon. Charles S.	"	May	22, 1906		
Trudeau, Toussaint	Deputy Minister	"	29, 1868	Oct.	1, 1879
Baillargé, G. F.	"	Oct.	4, 1879	Dec.	31, 1890
Gobeil, A. I. S. O.	"	Jan.	1, 1891		
Braun, Frederick	Secretary	July	1, 1867	Sept.	30, 1879
Chapleau, S.	"	Oct.	1, 1879	Nov.	4, 1880
Ennis, F. H.	"	Nov.	5, 1880	Jan.	13, 1885
Gobeil, A.	"	Jan.	23, 1885	Dec.	31, 1890
Roy, E. F. E.	"	"	1, 1891	"	31, 1900
Gélinas, Fred.	"	June	8, 1901		
McPherson, D. A.	Assistant Secretary	Jan.	18, 1891	Apr.	11, 1893
Desrochers, Rodolphe Charles	"	"	8, 1866		
Page, John	Chief Engineer	July	1, 1868	Oct.	1, 1879
Perley, H. F.	"	Nov.	26, 1880	July	10, 1891
Coste, Louis	"	July	26, 1892	March	18, 1899
Lafleur, E. D.	"	Jan.	7, 1905		
Scott, Thos. S.	Chief Architect	May	26, 1871	Oct.	30, 1881
Fuller, Thomas	"	Oct.	31, 1881	June	30, 1897
Ewart, David, I.S.O.	"	Nov.	2, 1897		

NAMES
OF THE
OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS OF CANADA
ON JUNE 30, 1906
WITH
DATES OF APPOINTMENT, SALARIES, ETC.

6-7 EDWARD VII., A. 1907

OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS.
STATEMENT showing the Names, Dates of Appointment, Salaries, &c., of persons employed on the various Slides and Booms, on June 30, 1906.

Name.	Date of Birth.	Position.	Where employed	Date of Appointment.	Salary.	Remarks.
<i>Collector of Public Works Revenue.</i>						
E. T. Smith.....	Nov. 26 1846.....	Collector, Chief Clerk Ottawa		July 1, 1889.....	\$ c. 1,900 00 a year.....	Date of first appointment to Crown timber office, Ottawa, June 23, 1864. Clerk in Dept. of Inland Rev., July 1, 1870, to June 30, 1889. Transferred to civil list, with rank of first class clerk, January 5, 1892.
F. X. Gagné.....	Sept. 23 1859.....	Clerk.....	"	Dec. 16 1897.....	1,100 00 "	Entered the service Aug. 13, 1889.
James Steen.....	June 17 1830.....	Boatman.....	"	July 12, 1889.....	60 00 a month.....	Employed during the season of navigation for 8 months each year. Date of first appointment, May, 26, 1861. Timber counter, Ottawa, for Dept. of Inland Revenue, Jan. 7, 1884, to June 30, 1889.
J. J. Brassard.....			"	March 1, 1901.....	60 00 "	Employed during the season of navigation, for 8 months each year.
<i>Saguenay District.</i>						
G. Bilodeau.....		Boom master.....	Chicoutimi.....	May 1, 1906.....	60 00 "	
Arm. Ouellet.....		" keeper.....	"	" 1, 1906.....	40 00 "	
W. Dallaire.....		" ".....	"	" 1, 1906.....	40 00 "	
<i>St. Maurice District.</i>						
L. P. Dallaire.....	June 11, 1866.....	Paymaster.....	Three Rivers.....	May 1, 1898.....	66 66 "	
Jos. Page.....	July 7, 1845.....	Boom master.....	Mth of St. Maurice.....	Dec. 10, 1879.....	75 00 "	
Jos. Dick.....	April 15, 1848.....	Asst. Boom master.....	Three Rivers.....	April 21, 1898.....	75 00 "	
H. Bourassa.....	April 15, 1859.....	Boom keeper.....	Ste. Flore.....	Dec. 2, 1906.....	45 50 "	
Moise Masson.....	Dec. 29, 1845.....	Boom master.....	Grandes Piles.....	April 17, 1898.....	75 00 "	
N. Lymburner.....	July 22, 1855.....	".....	Shawenigan Falls.....	July 1, 1895.....	75 00 "	
A. Paquin.....	June 3, 1855.....	".....	Ste. Flore.....	May 2, 1901.....	75 00 "	
<i>Ottawa District.</i>						
G. P. Brophy.....	Feb. 24, 1846.....	Superintendent.....	Ottawa.....	July 6, 1873.....	2,500 00 a year.....	Ottawa Rivers Works—In addition to the above officers, &c., there are employed
J. Kent.....	Jan. 26, 1864.....	Accountant.....	"	August 1, 1886.....	1,500 00 "	
Appointed accountant 4th October 1904.						

SESSIONAL PAPER No. 19

J. C. Scott.	June 27, 1885.	Asst engineer.	Ottawa.	April 1, 1889.	5 00 a day.	during the running season, one foreman on slide at \$1.50 and one assistant foreman at \$1.25 a day; also 25 to 30 labourers at \$1 to \$1.40 a working day.
S. E. Smith.	May 25, 1869.	Clerk.	"	Nov. 17, 1904.	2 50 "	Actively employed about 7 months. Oversees repairs in winter.
Wm. Cain.	April 22, 1860.	Messenger.	"	Jan. 1, 1892.	1 50 "	"
Pierre Saint-Pierre.	Mar. 13, 1853.	Deputy slide master.	Carillon.	June 1, 1897.	1 40 "	"
D. Noonan.	June 17, 1840.	Boom master.	Gatineau.	Mar. 21, 1878.	300 00 a year	Employed about 6 months.
J. Soudière.	Nov. 8, 1829.	Deputy slide master.	Chaudière.	June 14, 1878.	1 75 "	Oversees repairs in winter.
P. D. Chêne.	May 6, 1843.	"	Hull.	June 14, 1898.	2 50 "	Actively employed about 7 months.
W. A. Shreff.	Oct. 27, 1842.	"	Chate.	April 26, 1882.	2 50 "	Employed about 3 months during season of navigation.
John Harvey.	May 22, 1831.	Slide master.	Arnprior.	July 12, 1882.	25 00 a month.	Employed 4 months during season of navigation. Oversees repairs in winter.
Joseph McCreay.	Mar. 26, 1869.	Boom master.	Springtown.	May 15, 1880.	1 50 a day.	"
Patrick Barry.	" 27, 1868.	Slide master.	High Falls.	Mar. 10, 1888.	456 25 a year	"
Duncan McLaren.	Jan. 7, 1860.	Deputy slide master.	Portage du Fort.	Sept. 7, 1881.	480 00 "	"
N. Rochon.	April 2, 1879.	"	Black River.	Mar. 1, 1900.	2 00 a day	"
Wm. Selkirk.	May 9, 1849.	"	Lower Petawawa.	Jan. 15, 1906.	2 00 "	"
J. R. Jennings.	April 28, 1843.	"	Upper Petawawa.	June 2, 1905.	1 25 "	"
Wm. Thompson.	May 3, 1843.	"	Mountain.	Oct. 10, 1879.	1 25 "	"
S. Moorhead.	" 3, 1851.	"	Calumet.	Mar. 1, 1901.	1 50 "	"
John Mullin.	July 27, 1851.	"	Coulonge.	April 10, 1899.	300 00 a year	"
T. Castello.	June 13, 1851.	"	Des Joachim.	Mar. 1, 1904.	2 00 a day	Employed 3 months during season of navigation. Will inspect works when required.
J. F. McGuire.	Dec. 16, 1842.	"	Dumoulin.	May 1, 1897.	2 50 "	"
Jas. Carey.	July 6, 1850.	In charge.	Cedar Lake Dam.	April 1, 1901.	2 00 "	"
J. Malheur.	Nov. 13, 1844.	Deputy slide master.	Crooked Chute.	" 3, 1905.	2 00 "	"
A. H. Johnson.	" 23, 1839.	"	Chenaux.	" 3, 1865.	2 50 "	Paid during season of navigation, 7 mos.
<i>Neveville District.</i>						
S. Clegg.	Oct. 16, 1859.	Superintendent.*	Peterborough.	Mar. 1, 1901.	300 00 a year	Receives \$500 a year from Department of Railways and Canals.
G. H. Giroux.	Feb. 6, 1868.	Clerk, Supt's office.*	"	" 1, 1880.	400 00 "	\$250 a year as lock-master, Dept. R. & C.
W. T. Junkin.	Nov. 2, 1867.	Slide master.*	Fenelon Fall.	Nov. 15, 1886.	100 00 "	Receives \$150 a year from Department of Railways and Canals.
R. T. Hill.	Aug. 13, 1848.	"	Buckhorn.	July 1, 1891.	100 00 "	"
Hamilton Johnston.	Aug. 20, 1847.	"	Healey's Falls.	" 15, 1892.	200 00 "	"
John Dinwiddie.	May 21, 1837.	"	Lakefield.	June 20, 1853.	150 00 "	Receives \$240 a year from Department of Railways and Canals.
C. F. Fuller.	"	"	Burleighs Falls.	"	"	"
<i>Richelieu District.</i>						
C. Choquette.	Nov. 25, 1850.	Boom master.	Belœil Station.	July 26, 1897.	100 00 "	"
Burlington Channal Swing Bridge.						
Wm. Onand.	July 6, 1837.	Bridge attendant.	Burlington.	Sept. 19, 1896.	600 00 "	"

6-7 EDWARD VII., A. 1907

STATEMENT showing Names, &c., of persons employed on various works—*Concluded.*

Name.	Date of Birth.	Position.	Where employed.	Date of Appointment.	Salary.	Remarks.
<i>Burlington Channal Swing Bridge.</i>					\$ c.	
W. Hopkins	June 4, 1846	Bridge Assistant	Burlington	July 1, 1902	1 50 a day	Employed 9 months.
H. Lampman	Dec. 14, 1863	"	"	Sept. 8, 1902	1 50 "	"
Jas. Eustice	Feb. 27, 1872	"	"	" 19, 1886	1 50 "	"
<i>Yamaska Lock.</i>						
O. Mineau	July 4, 1844	Lock keeper	Yamaska	" 1, 1885	75 00 a month	"
H. Lambert	Aug. 20, 1844	"	"	July 1, 1897	40 00 "	"
<i>Rivière du Lièvre. Lock</i>						
Hugh R. Gorman	Sept. 20, 1842	Lock master	Rivière du Lièvre	April 15, 1897	490 00 a year	Employed 8 months.
Charles Brazeau	Dec. 23, 1862	Labourer	"	Mar. 3, 1902	35 00 a month	
<i>Rivière Saint-Louis. Feeder.</i>						
Julien Monpetit	Mar. 4, 1866	Gate keeper	Rivière St-Louis	May 11, 1903	10 00 "	

JOS. VINCENT.

NAMES
OF
PERSONS EMPLOYED ON THE VARIOUS GRAVING DOCKS
ON JUNE 30, 1906
WITH
DATES OF APPOINTMENT, SALARIES, ETC.

6-7 EDWARD VII., A. 1907

GRAVING DOCK EMPLOYEES.

STATEMENT showing the names, Dates of Appointment, Salaries, &c., of persons employed on the various Graving Docks, June 30, 1906.

Name.	Position	Where Employed.	Date of Appointment.	Salary.	Remarks.
<i>Esquimalt Graving Dock.</i>					
<i>British Columbia.</i>					
J. A. Gould	Dockmaster	Esquimalt	June 30, 1906.	\$ 133 33 a month.	
John Jeffcott	Engineer	"	Jan. 4, 1901.	100 00 "	
F. N. Jones	Assistant engineer	"	" 8, 1901.	80 00 "	
A. D. Grieves	Carpenter	"	Dec. 1, 1887.	80 00 "	
J. A. Maltravers	Labourer.	"	July 1, 1906.	50 00 "	
J. Stock	"	"	" 1, 1894.	50 00 "	
Chas Jordan	Stoker.	"	" 1, 1901.	60 00 "	
G. Springer	"	"	April 1, 1903.	60 00 "	
J. Young	Night watchman	"	June 1, 1903.	50 00 "	
<i>Lévis Graving Dock.</i>					
Alf. Samson.	Dockmaster.	Lévis	Feb. 15, 1900.	1,600 00 a year.	
W. Macdougall	Mechanical engineer	"	June 1, 1888.	75 00 a month.	
T. Després	Asst. mechanical engineer.	"	July 21, 1901.	60 00 "	
Narcisse Lemelin.	Fireman.	"	June 1, 1888.	40 00 "	
<i>Kingston Graving Dock.</i>					
F. S. Rees	Dockmaster	Kingston	April 1, 1897.	1,000 00 a year.	
James Gillie	1st engineer	"	Nov. 1, 1905.	75 00 a month.	
Wm. Geoghegan	Fireman.	"	" 1, 1892.	45 00 "	
C. Staley	Watchman	"	" 1, 1892.	45 00 "	

JOS. VINCENT.

LIST
OF
ENGINEERS, ENGINEMEN, FIREMEN AND CARETAKERS
EMPLOYED IN THE
PUBLIC BUILDINGS THROUGHOUT THE DOMINION ON JUNE 30, 1906
DATES OF APPOINTMENT, SALARIES, ETC.

6-7 EDWARD VII., A. 1907

ENGINEERS AND CARETAKERS' PUBLIC BUILDINGS.

STATEMENT showing the Names, &c., of the Engineers, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on June 30, 1906.

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time employed each Year.	Yearly Salary.
						\$ cts.		\$ cts.
Amherst	N.S.	J. H. Chapman	Jan. 1, 1846	Caretaker.	Sept. 1, 1900	33 33	12 months	400 00
Antigonish		Angus McDonald	Nov. 1, 1894	"	June 1, 1905	33 33	12 "	400 00
Annapolis		John McKay	Oct. 26, 1847	"	April 1, 1891	33 33	12 "	400 00
Aricat.		Mrs. G. DeKoch	June 30, 1868	"	May 5, 1905	12 50	12 "	150 00
Baddeck		D. F. McKenzie	May 20, 1848	"	Jan. 21, 1899	20 83	12 "	250 00
Dartmouth		I. C. Henley	Dec. 11, 1846	"	May 22, 1894	20 83	12 "	250 00
Digby		F. Dennison	Nov. 8, 1841	"	Mar. 14, 1902	33 33	12 "	400 00
Guyaborough		W. G. Hadley	Nov. 29, 1844	"	May 2, 1906	4 16	12 "	50 00
Halifax		Richard Power	Aug. 15, 1834	Engineer.	Oct. 1, 1871	62 50	8 "	750 00
"		J. DeYoung	Dec. 8, 1860	Fireman	Nov. 28, 1904	50 00	12 "	400 00
"		J. F. Sullivan	April 16, 1866	Caretaker.	July 1, 1892	33 33	12 "	400 00
"		J. Delaney	May, 1848	Watchman	Jan. 6, 1906	39 00	8 "	468 00
"		John Crowell	Feb. 26, 1862	Engineer.	Dec. 13, 1901	50 00	8 "	400 00
"		R. Morrison	Mar. 26, 1867	Fireman	Mar. 4, 1903	50 00	12 "	400 00
"		M. O'Neil	Dec. 30, 1850	Caretaker.	Oct. 1, 1897	37 50	12 "	450 00
Kentville		John Oxley	April 17, 1856	Fireman	Feb. 2, 1897	55 00	12 "	660 00
Liverpool		W. Hiltz	" 4, 1864	Caretaker.	Nov. 14, 1900	33 33	12 "	400 00
Lunenburg		James Clements	June 5, 1835	"	June 7, 1895	33 33	12 "	400 00
New Glasgow		J. A. Hebb	Nov. 3, 1853	"	" 7, 1895	25 00	12 "	300 00
North Sydney		J. A. Mutch	Dec. 13, 1840	"	Oct. 3, 1901	33 33	12 "	400 00
Pictou		Alex. Green	Feb. 16, 1825	"	" 1, 1897	33 33	12 "	400 00
Springhill		Jas. Arbuckle	July 18, 1836	"	Dec. 20, 1896	41 66	12 "	500 00
Sydney Mines		J. A. Watt	Sept. 6, 1849	"	" 1, 1903	33 33	12 "	400 00
Sydney South		C. McMillan	Nov. 26, 1857	"	Jan. 19, 1905	33 33	12 "	400 00
Truro		Mrs. M. Keefe	Jan. 4, 1850	"	Jan. 13, 1904	33 33	12 "	400 00
Windsor		Alex. P. Smith	Mar. 17, 1837	Caretaker.	April 1, 1897	33 33	12 "	400 00
Yarmouth		A. A. Mosher	Nov. 16, 1841	"	Feb. 13, 1899	33 33	12 "	400 00
Charlottetown	P.E.I.	W. H. Whalen	Dec. 23, 1841	"	Mar. 1, 1900	33 33	12 "	400 00
"		Wm. J. Fraser	Jan. 1, 1836	" & engineer	April 3, 1894	33 33	12 "	400 00
"		Gao. Walker	Aug. 28, 1826	Messenger	Jan. 19, 1898	41 67	12 "	500 00
"		M. A. Allan	" 1, 1855	"	" 24, 1898	45 83	12 "	550 00
"		Angus McKenzie	Mar. 12, 1856	Watchman	Nov. 1, 1896	45 00	12 "	540 00
Montague		N. Peardon	" 16, 1837	Caretaker.	May 1, 1901	13 33	12 "	160 00

SESSIONAL PAPER No. 19

Summerside.	"	Dominion building	A. McSween.	Sept.	25, 1835	Caretaker.	Sept.	1, 1897	33	33	12	months	400 00	
Bathurst.	N.B.	Post office.	J. H. Doucet.	July	16, 1846	"	Mar.	26, 1906	33	33	12	"	400 00	
Campbellton	N.B.	Public building.	W. H. Parker.	"	"	Caretaker.	"	Jan.	26, 1906	33	33	12	"	400 00
Chatham.	"	Post office.	C. Johnston.	May	18, 1856	"	Mar.	27, 1895	25	00	12	"	300 00	
Charleton, St. John,	"	"	S. Clark	Mar.	12, 1860	"	Oct.	28, 1905	8	33	12	"	100 00	
Dalhousie	"	"	Wm. Gould	Jan.	1, 1853	"	Nov.	26, 1890	33	33	12	"	400 00	
Fredericton	"	"	L. Yersa.	Dec.	18, 1346	"	July	1, 1900	33	33	12	"	400 00	
Marysville	"	"	G. W. Foster.	Feb.	2, 1836	"	Dec.	23, 1903	12	50	12	"	150 00	
Moncton	"	"	E. B. Hicks	Jan.	11, 1832	"	Jan.	11, 1886	33	33	12	"	400 00	
Newcastle	"	"	Patrick Keating	Mar.	13, 1840	"	Oct.	28, 1886	33	33	12	"	400 00	
Richibucto.	"	"	J. Murray	Aug.	16, 1839	"	Feb.	1, 1904	33	33	12	"	400 00	
St. John	"	Custom House.	Neil J. Morrison	Nov.	25, 1858	Eng. & caretaker	Apr.	27, 1894	60	00	12	"	720 00	
"	"	"	Christopher White	Nov.	20, 1844	Fireman.	Nov.	9, 1885	50	00	12	"	600 00	
"	"	"	James A. Paul	Aug.	1, 1837	Caretaker.	Oct.	13, 1891	41	67	12	"	500 00	
"	"	Post office.	James Wolfe.	Mar.	10, 1850	Engineer.	Dec.	1, 1893	55	00	12	"	660 00	
"	"	"	Edward Haney	Feb.	22, 1849	Hoist attendant.	Nov.	27, 1882	50	00	12	"	600 00	
St. Stephen.	"	"	Samuel Topping	Apr.	21, 1840	Caretaker.	May	25, 1887	33	33	12	"	400 00	
Sussex	"	"	Mrs. N. Dryden	June	21, 1840	"	Mar.	26, 1901	25	00	12	"	300 00	
Woodstock	"	"	Charles Trafton	Jan.	20, 1839	"	May	1, 1897	33	33	12	"	400 00	
Acton Vale.	P.Q.	"	V. Lapointe	Dec.	27, 1859	"	Jan.	3, 1906	33	33	12	"	400 00	
Aylmer	"	"	A. Bourgeau	Jan.	23, 1870	"	Apr.	9, 1904	8	33	12	"	100 00	
Buckingham	"	"	T. F. Bisson	May	23, 1848	"	Feb.	3, 1903	10	00	12	"	120 00	
Coaticook	"	Public building	Israel Baldwin	Nov.	16, 1839	"	June	27, 1893	33	33	12	"	400 00	
Drummondville.	"	"	A. Paré	Apr.	27, 1842	"	"	6, 1902	25	00	12	"	300 00	
Farnham.	"	Post office.	J. Bélanger	Jan.	19, 1867	"	Jan.	30, 1906	8	33	12	"	100 00	
Fraserville	"	"	W. D. Raymond	"	7, 1876	"	Apr.	14, 1905	25	00	12	"	300 00	
Granby	"	Public building	J. A. Beauchemin.	May	1, 1862	"	May	12, 1903	25	00	12	"	300 00	
Hochelega.	"	Post office	J. H. Brown	Oct.	7, 1851	"	Mar.	27, 1902	16	66	12	"	200 00	
Hull	"	" &c.	J. T. Madore.	Dec.	1, 1843	"	"	8, 1900	12	50	12	"	150 00	
Joliette.	"	"	A. Ratel.	"	29, 1845	"	Sept.	1, 1897	8	33	12	"	400 00	
Lachine.	"	"	P. O. Robert.	Sept.	7, 1846	"	Jan.	26, 1899	8	33	12	"	100 00	
Laprairie.	"	"	Jos. Brisson	Nov.	11, 1869	"	Nov.	22, 1901	12	50	12	"	150 00	
L'Assomption	"	"	E. Arbour	Dec.	8, 1850	"	July	1, 1904	12	50	12	"	150 00	
Longueuil.	"	"	F. X. Maille.	May	12, 1856	"	Mar.	16, 1906	25	00	12	"	300 00	
Montreal.	"	Dominion building	J. T. Murphy	May	6, 1865	Foreman engin'r.	Mar.	2, 1903	100	00	12	"	1,200 00	
"	"	"	Ed. Lanctot.	Apr.	18, 1837	Caretaker.	Dec.	3, 1898	41	67	12	"	500 00	
"	"	Examining warehouse	M. Boyer	Feb.	18, 1848	Fireman.	Mar.	4, 1882	50	00	12	"	600 00	
"	"	"	Att. Lesieur	June	22, 1868	Caretaker.	Apr.	18, 1905	45	00	12	"	540 00	
"	"	"	Jos. Fergus	May	15, 1871	Fireman	Nov.	2, 1904	50	00	12	"	600 00	
"	"	"	Jos. Langevin	Mar.	10, 1850	"	Oct.	18, 1904	50	00	12	"	600 00	
"	"	Public building.	P. Prudhomme.	Mar.	7, 1854	Hoist attendant.	Mar.	19, 1906	50	00	12	"	600 00	
"	"	Examining warehouse	L. D. Thibault.	Jan.	28, 1861	Post. hoist att.	Dec.	15, 1905	50	00	12	"	600 00	
"	"	"	R. Barthe	July	12, 1863	Hoist attendant.	May	1, 1906	50	00	12	"	600 00	
"	"	"	G. Labelle.	May	14, 1871	"	Sept.	12, 1904	50	00	12	"	600 00	
"	"	"	S. McGarry.	June	15, 1873	"	"	12, 1904	50	00	12	"	600 00	
"	"	"	J. Neville.	Mar.	18, 1870	"	"	12, 1904	50	00	12	"	600 00	
"	"	"	H. Marchand	Mar.	18, 1849	"	Dec.	2, 1888	50	00	12	"	600 00	
"	"	"	E. Guernon.	Sept.	28, 1868	"	Oct.	25, 1904	50	00	12	"	600 00	
"	"	"	A. Drouin	Dec.	25, 1868	"	June	14, 1904	50	00	12	"	600 00	
"	"	"	Ad. Desjardins	Sept.	3, 1859	Cleaner.	June	30, 1904	45	00	12	"	540 00	

6-7 EDWARD VII., A. 1907

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on June 30, 1906.—Continued.

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time employed each Year.	Yearly Salary.
						\$ cts.		\$ cts.
Montreal.	P Q. Examining warehouse.	F. Nadon	June 15, 1847	Cleaner	Dec. 15, 1902	48 00	12 months	576 00
"	" Post office.	F. Green	Oct 4, 1837	Engineer	Jan. 1, 1885	60 00	12 "	720 00
"	"	S. N. Nickle	Dec. 25, 1871	Mech. elect'n.	Mar. 1, 1894	70 00	12 "	840 00
"	"	F. X. Lefebvre	Dec. 13, 1859	Asst. "	June 28, 1905	55 00	12 "	660 00
"	"	A. Nuttal	July 15, 1872	Electrician	June 1, 1905	58 50	12 "	700 00
"	"	I. Trudeau	Jan. 22, 1863	Caretaker.	Oct. 1, 1902	50 00	12 "	600 00
"	"	Oscar Renaud	Feb. 19, 1863	Elevator man.	Sept. 1, 1898	50 00	12 "	600 00
"	"	Art. Forget	July 25, 1867	"	Dec. 15, 1893	50 00	12 "	600 00
"	"	L. Braut	Dec. 29, 1854	"	Sept. 1, 1901	50 00	12 "	600 00
"	"	A. Bourassa	June 1, 1857	Freight hoist at.	Aug. 1, 1893	50 00	12 "	600 00
"	"	C. Berthiaume	Nov. 8, 1870	Night watchman	May 3, 1906	50 00	12 "	600 00
"	"	O. Ladurantie	"	Pass. hoist at.	April 26, 1906	50 00	12 "	600 00
"	"	C. Vadeboncoeur	May 17, 1842	Freight hoist at	Feb. 6, 1864	50 00	12 "	600 00
"	"	J. Dulrisac	Feb. 2, 1863	Messenger	Dec. 15, 1893	2 00 p.d.	12 "	730 00
"	"	Louis St. Jean	Sept. 17, 1840	Fireman.	Dec. 1, 1892	50 00	12 "	600 00
"	"	C. Daudelin	June 13, 1843	Caretaker.	July 16, 1892	37 50	12 "	450 00
"	"	H. Valiquette	Dec. 30, 1871	Carpenter	Feb. 1, 1904	52 00	12 "	624 00
"	"	B. Lajeunesse	Nov. 20, 1861	Fireman.	Nov. 23, 1896	50 00	12 "	600 00
"	"	J. Gagnier	April 20, 1867	Engineman.	Feb. 14, 1899	50 00	12 "	600 00
"	"	A. Lacrochetière	June 24, 1864	Fireman.	Nov. 1, 1904	45 00	8 "	360 00
Quebec.	" Drill hall and armoury	D. P. Kennedy	Feb. 3, 1865	Engineer	Nov. 1, 1904	75 00	12 "	900 00
"	" Examining warehouse.	T. P. McLaughlin	Aug. 25, 1871	Fireman.	July 26, 1892	53 33	12 "	640 00
"	"	James O'Neil	Nov. 15, 1861	"	Aug. 1, 1894	45 00	12 "	540 00
"	"	John R. Mountain	Nov. 25, 1836	Caretaker.	Nov. 10, 1898	45 00	12 "	540 00
"	"	F. Roy	Feb. 25, 1836	"	Sept. 1, 1897	58 33	12 "	700 00
"	"	F. J. Cooper	July 6, 1871	Fireman.	June 25, 1895	55 00	12 "	660 00
"	"	M. Lewis	May 14, 1877	Caretaker.	Sept. 1, 1905	1 50 p.d.	12 "	547 50
Peribonka.	Governor General Quarters.	E. Roy	Dec. 12, 1867	"	Oct. 1, 1902	25 00	12 "	300 00
Roberval.	Immigration building.	J. B. Carboneau	Aug. 14, 1864	"	Nov. 20, 1901	25 00	12 "	300 00
Rimouski.	"	A. Lepege	Feb. 7, 1866	"	Jan. 1, 1901	12 50	12 "	150 00
Richmond.	Post office	H. Desmarais	July 14, 1869	"	May 7, 1898	25 00	12 "	300 00
Sherbrooke	Public building	O. Desvee	Aug. 6, 1848	"	April 2, 1898	33 33	12 "	400 00
Sorel.	"	C. Robitaille	Jan. 22, 1848	"	Sept. 1, 1897	40 00	12 "	480 00
Saint Henri	Post office	A. C. A. Bissonnette	May 26, 1858	"	Mar. 4, 1895	33 33	11 "	400 00
Saint Hyacinthe	Public building	J. Girouard	Sept. 16, 1838	"	Aug. 5, 1905	33 33	12 "	400 00
"	Inland revenue	E. Clapin	April 9, 1844	"	July 19, 1904	33 33	12 "	400 00

SESSIONAL PAPER No. 19

	Post office.	L. Forrant.	Jan.	21, 1849	Caretaker.	April	14, 1897	23	16	12	months.	
Saint John's.....	Public building	J. Savard	Oct.	24, 1859	"	Sept.	1, 1900	33	33	12	"	360 00
Saint Jérôme.....	Post office	M. A. Campeau	Mar.	6, 1846	"	May	28, 1905	33	33	12	"	400 00
St. Louis du Mile End	Public building.	N. Sasseville	Jan.	29, 1844	"	Jan.	2, 1906	25	00	12	"	300 00
Terebonne.....	Post office.	J. Rousseau	Dec.	22, 1859	"	July	1, 1905	12	50	12	"	150 00
Theford Mines....	Custom house	P. Gravelle	June	3, 1828	"	Feb.	1, 1891	26	00	12	"	300 00
Three Rivers.....	Post office	A. Gauchier	Feb.	4, 1850	"	"	1, 1898	33	33	12	"	400 00
" "	Public building	J. B. Lanier	Oct.	20, 1862	"	"	2, 1905	33	33	12	"	400 00
Valleyfield.....	"	G. Beaudet	Feb.	26, 1862	"	Mar.	3, 1904	6	26	12	"	75 00
Victoriaville.....	Post office.	Mrs. R. Elliott	Feb.	26, 1862	"	June	9, 1905	33	33	12	"	400 00
Amherstburg.....	"	Wm. Moulton	Mar.	23, 1839	"	Jan.	9, 1891	33	33	12	"	400 00
Almonte.....	Public building	R. B. McCreary	Jan.	11, 1862	"	Mar.	15, 1899	33	33	12	"	400 00
Arnprior.....	Post office	E. Sivigny	Mar.	19, 1847	"	May	1, 1903	33	33	12	"	400 00
Barrie.....	"	H. Purvis	Sept.	12, 1826	"	Dec.	15, 1900	33	33	12	"	400 00
Brockville.....	"	John Squire	April	24, 1842	"	Oct.	27, 1890	50	00	12	"	600 00
Brantford.....	Public building.	Wm. Hauns	Aug.	13, 1863	"	Mar.	1, 1905	26	00	12	"	300 00
Bridgeburg.....	"	W. W. Allin	Jan.	13, 1850	"	July	10, 1905	33	33	12	"	400 00
Bowmanville.....	"	S. Haight	Aug.	26, 1857	"	Jan.	24, 1901	50	00	12	"	600 00
Belleville.....	"	J. Clemens	June,	21, 1840	"	May	15, 1900	33	33	12	"	400 00
Berlin.....	"	James McBride	Oct.	5, 1840	"	Jan.	29, 1901	33	33	12	"	400 00
Braunton.....	"	Jas. F. Halfpenny	April	17, 1858	"	May	13, 1892	26	00	12	"	300 00
Carlson Place....	"	R. W. Mitchell	Nov.	6, 1848	"	Jan.	7, 1885	41	66	12	"	500 00
Chatham.....	"	R. Conroy	Nov.	6, 1848	"	April	1, 1897	33	33	12	"	400 00
Cornwall.....	"	G. Ayga	May	29, 1861	"	&c.	Sept. 3, 1891	4	16	12	"	50 00
Cayuga.....	"	J. Scott	Jan.	29, 1856	"	Feb.	9, 1904	4	16	12	"	50 00
Canton.....	"	John Boyd	Dec.	9, 1836	"	Aug.	21, 1901	33	33	12	"	400 00
Cobourg.....	Public building	M. Hart	Jan.	18, 1862	"	July	1, 1903	33	33	12	"	400 00
Deseronto.....	"	Wm. Graham	Dec.	5, 1853	"	"	1, 1898	4	16	12	"	50 00
Dundas.....	"	D. J. McCallum	April	5, 1834	"	Sept.	1, 1904	33	33	12	"	400 00
Fort William....	"	T. Barrett	June	17, 1861	"	Aug.	1, 1902	33	33	12	"	400 00
Galt.....	"	R. McLeod	July	30, 1865	"	May	25, 1901	33	33	12	"	400 00
Guelph.....	" &c	G. Busset	April	14, 1851	"	Sept.	1, 1897	33	33	12	"	400 00
Goderich.....	Dominion building	Alfred Barnard	Dec.	27, 1847	"	Dec.	10, 1894	50	00	12	"	600 00
"	"	J. Wiglesworth	Aug.	7, 1863	Fireman	Oct.	1, 1896	50	00	12	"	600 00
"	"	Thomas Nicholson	Dec.	17, 1857	Engineer	Mar.	2, 1897	50	00	12	"	600 00
Inland revenue building.	"	C. Blackman	May	23, 1850	Caretaker.	Jan.	9, 1905	12	00	12	"	144 00
Public building.	"	John McDonald	June	30, 1841	"	Nov.	20, 1900	33	33	12	"	400 00
R. Military College.	"	F. Harrison	Aug.	21, 1875	Fireman	May	1, 1902	1,50 p. d. 12	"	"	"	365 00
Armoury.....	"	F. Forsythe	Nov.	15, 1866	Engineer	Feb.	11, 1904	75	00	12	"	600 00
"	"	Wm. Hazlett	May	27, 1874	"	Nov.	20, 1900	75	00	12	"	900 00
R. Military College.	"	J. Quigley	Oct.	30, 1867	Fireman.	Jun.	1, 1903	55	00	12	"	660 00
"	"	M. Redmond	"	2, 1867	"	Jan.	29, 1902	45	00	12	"	540 00
"	"	L. Cochrane	Mar.	"	"	July	29, 1902	45	00	12	"	640 00
Post office	"	Jas. Kehoe	June	21, 1873	Electrician	Sept.	15, 1905	33	33	12	"	400 00
Custom house.	"	M. Mulken	Sept.	4, 1837	Caretaker.	May	18, 1888	50	00	12	"	600 00
"	"	Wm. Greer	Oct.	12, 1839	Caretaker.	Mar.	16, 1884	33	33	12	"	400 00
Post office.	"	John Price	"	6, 1836	Engineer	Jan.	14, 1884	50	00	12	"	600 00
Drill hall.....	"	A. Maclean	Nov.	21, 1851	"	Dec.	1, 1904	60	00	12	"	720 00
Post office and C.-house.	"	Wm. Galbraith	Jan.	8, 1844	Caretaker	Nov.	17, 1893	33	33	12	"	400 00
"	"	Mrs. C. E. Webster	July	12, 1846	"	Oct.	4, 1901	33	33	12	"	400 00

6-7 EDWARD VII., A. 1907

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at the Dominion Public Buildings, &c.—Continued.

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time employed each year.	Yearly Salary.
						\$	cts.	\$
Niagara Falls.	Public building.	Wm. J. Sheppard	Jan. 4, 1854	Caretaker	Jan. 15, 1897	33	33	400 00
Orangeville.	"	D. McPherson	April 30, 1851	"	July 15, 1900	33	33	400 00
Orillia	"	John Fraley	Mar. 14, 1844	"	Nov. 1, 1898	29	16	350 00
Paris.	"	Sam Lee	May 17, 1842	"	July 7, 1902	33	33	400 00
Peterborough.	Post office	John Irwin.	May 17, 1842	"	Sept. 8, 1887	25	00	300 00
"	Custom house.	Wm. Taylor	Nov. 25, 1839	"	Jan. 26, 1899	25	00	300 00
Petrolia.	Post office.	James Shaw	June 11, 1842	"	Sept. 12, 1904	33	33	400 00
Picton	Public building.	D. Welbanks	Feb. 8, 1850	"	April 11, 1902	33	33	400 00
Port Arthur.	"	D. McKenzie	Sept. 12, 1843	"	May 14, 1906	25	00	300 00
Port Colborne.	Post Office.	Wm. Armstrong	Sept. 9, 1846	"	June 11, 1888	25	00	300 00
Port Hope.	"	Jos. Curlik.	June 4, 1834	"	May 1, 1905	33	33	400 00
Pembroke.	Public building.	Samuel Hamilton	June 4, 1834	"	Oct. 29, 1890	33	33	400 00
Prescott.	Post office.	R. Birks	April 6, 1822	"	May 1, 1899	33	33	400 00
Rat Portage.	Public building.	Mrs. J. Link	May 10, 1850	"	Dec. 7, 1901	33	33	400 00
Sarnia	"	J. H. Dyble	Aug. 26, 1860	"	Nov. 7, 1903	33	33	400 00
Smith's Falls.	"	P. W. Lewis	July 19, 1853	"	Jan. 8, 1896	33	33	400 00
Stratford.	Post office, &c.	J. P. Murray	July 29, 1855	Engineer.	"	50	00	600 00
Sault Ste. Marie	Public Building	P. J. Racine	Sept. 25, 1865	Caretaker	Sept. 29, 1905	33	33	400 00
St. Catharines.	Armouries.	J. McLaren	Feb. 23, 1862	Engineer.	Jan. 18, 1906	50	00	600 00
St. Thomas.	Post Office, &c.	A. Clark	Sept. 14, 1850	Caretaker.	Dec. 12, 1904	33	33	400 00
Stratroy.	"	G. Luton.	May 25, 1857	"	April 14, 1903	33	33	400 00
Toronto.	Public building.	Wm. J. Johnston.	May 12, 1840	"	Oct. 25, 1890	33	33	400 00
"	Dominion buildings.	H. E. Hamilton	April 14, 1838	Forem., engineer	April 10, 1902	100	00	1,200 00
"	Inland revenue building.	C. H. Baillie.	Sept. 22, 1852	Fireman	Jan. 13, 1891	55	00	660 00
"	Custom house.	Fred Faragher	Oct. 16, 1865	"	Nov. 1, 1889	55	00	660 00
"	Examining warehouse.	Ed. Switzer.	Feb. 10, 1856	Hoist attendant.	Aug. 18, 1901	55	00	660 00
"	"	James Cosgrove.	Feb. 10, 1844	Engineer.	Dec. 28, 1874	70	00	840 00
"	"	Ed. Appleton.	Sept. 26, 1844	Fireman	Sept. 23, 1886	60	00	720 00
"	"	Alexander Dey	Sept. 27, 1863	Hoist attendant.	Dec. 1, 1887	50	00	600 00
"	"	Wm. Chenery	Dec. 19, 1851	"	"	50	00	600 00
"	"	F. Simpson.	Jan. 8, 1869	"	Sept. 1, 1893	50	00	600 00
"	"	Thos. Jones.	Nov. 10, 1853	Watchman.	April 4, 1902	50	00	600 00
"	Union station.	J. Gormally	Nov. 26, 1872	Hoist attendant.	Oct. 17, 1901	50	00	600 00
"	"	W. P. Murphy.	Sept. 16, 1868	Elevatorman.	Sept. 28, 1905	50	00	600 00
"	P. O. Station.	James Rae	Sept. 17, 1864	Caretaker.	Jan. 12, 1904	41	66	500 00
"	Post office	J. Somers.	April 8, 1835	Engineer.	Oct. 9, 1887	55	00	660 00
"	"	P. Cassidy	May 2, 1862	Fireman	May 8, 1906	55	00	660 00

SESSIONAL PAPER No. 19

Toronto...	Ont.	Post office.	W. J. Graham.	Mar.	16, 1840	Fireman	Oct.	1, 1896	55 00	12 months	660 00
"	"	"	J. C. Davidson	May	21, 1876	Elevatorman.	April	11, 1903	45 00	12 "	540 00
"	"	Junction	J. Devins.	July	18, 1847	Caretaker.	Feb.	3, 1905	33 33	12 "	400 00
"	"	Drill hall	Richard Eyre.	Oct.	11, 1849	Firemen.	Mar.	25, 1895	55 00	12 "	660 00
"	"	Public building	D. Glinna.	Aug.	8, 1867	"	Oct.	1, 1898	60 00	12 "	720 00
Trenton.	"	"	David Allan.	May	13, 1844	Caretaker.	Aug.	31, 1889	33 33	12 "	400 00
Warkenton.	"	"	Mrs T. Gibson	Oct.	26, 1848	"	May	12, 1905	33 33	12 "	400 00
Windsor.	"	Post office	L. Belleperche	Oct.	26, 1848	Engineman.	Dec.	24, 1897	50 00	8 "	400 00
"	"	"	W. Curtis	Mar.	6, 1844	Caretaker.	Nov.	9, 1880	33 33	12 "	400 00
"	"	Drill hall	W. Wheeler	Sept.	27, 1874	Engineer.	Jan.	9, 1905	50 00	8 "	400 00
Woodstock	"	Public building	Robert Kerr	June	6, 1864	"	Dec.	11, 1901	33 33	12 "	400 00
Brandon.	Man.	"	T. Giles	Mar.	30, 1843	"	Aug.	1, 1897	50 00	12 "	600 00
Portage-la-Prairie.	"	"	J. S. Telfer	July	26, 1840	"	July	1, 1904	45 00	12 "	540 00
Winnipeg.	"	Post office.	Jos Hay	May,	4, 1853	Engineman.	July	20, 1905	75 00	12 "	900 00
"	"	"	J. Woods	"	6, 1879	Fireman	May	10, 1906	55 00	12 "	660 00
"	"	"	Joseph Coutu	"	10, 1843	Hoist attendant.	Mar.	16, 1887	55 00	12 "	660 00
"	"	"	A. Boiteau.	Sept.	23, 1860	Watchman	April	4, 1905	55 00	12 "	660 00
"	"	"	P. Johnson.	May	31, 1881	Caretaker.	Oct.	19, 1904	50 00	8 "	400 00
"	"	Custom house.	G. K. Williams	April	15, 1862	Fireman.	April	4, 1905	50 00	12 "	600 00
Calgary	N. W. T.	Public building	E. N. Brown	Mar.	8, 1840	Caretaker.	Jan.	24, 1891	45 00	12 "	540 00
"	"	Court house.	J. McGaffray	Feb.	2, 1871	"	July	28, 2904	45 00	12 "	510 00
Carnduff.	"	"	Alex Deans.	Sept.	19, 1858	"	Oct.	1, 1903	41 66	12 "	500 00
Edmonton	"	Land and registry office	R. Wylie	July	7, 1859	"	June	21, 1894	41 66	12 "	500 00
"	"	Court-house	L. Brunelle	Mar.	12, 1852	"	April	7, 1903	45 00	12 "	540 00
Lethbridge.	"	Court-house & C. house	D. Pelletier	Aug.	4, 1854	"	Dec.	17, 1905	45 00	12 "	540 00
Moosomin.	"	"	J. C. Jopp	Jan.	6, 1848	"	April	29, 1887	60 00	12 "	720 00
Moose-jaw.	"	"	H. Sikes	Jan.	1, 1839	"	July	1, 1906	33 33	12 "	400 00
Medford.	"	"	John Ryan	June	24, 1827	"	Nov.	1, 1893	55 00	12 "	660 00
Medicine-Hat.	"	"	J. H. G. Bray	Jan.	24, 1841	"	June	7, 1900	45 00	12 "	540 60
Prince Albert	"	Land and registry office.	Mme G. Cassie	July	12, 1834	"	Jan.	1, 1904	33 33	12 "	400 00
Red Deer	"	Court-house.	S. M. Baurnerman	July	12, 1835	"	July	20, 1905	45 00	12 "	540 00
Regina.	"	Court-house and C. house.	P. McCara	Dec.	21, 1840	"	Aug.	1, 1889	50 00	12 "	600 00
"	"	" &c.	Jas. McLachlan.	Mar.	9, 1840	Fireman.	Oct.	3, 1898	50 00	12 "	600 00
"	"	Land office.	W. J. Gore	July	22, 1863	Caretaker.	May	6, 1901	50 00	12 "	600 00
Woleley	"	Court-house.	W. Hare	Dec.	2, 1857	"	Mar.	1, 1901	45 00	12 "	540 00
Yorkton	"	"	Geo. Betts.	May	3, 1845	"	Feb.	6, 1903	41 66	12 "	500 00
Atlin.	B. C.	Public building	J. A. Fraser	Jan.	1, 1851	"	June	26, 1901	12 50	12 "	150 00
Kamloops	"	Post office	J. R. McNabb	Sept.	6, 1852	"	Sept.	19, 1905	50 00	12 "	600 00
Nanaimo.	"	Public building	J. Thompson	Sept.	2, 1836	"	May	1, 1897	50 00	12 "	600 00
Nelson	"	"	B. B. Smith	"	12, 1845	"	Mar.	9, 1903	50 00	12 "	600 00
New Westminster.	"	Post office	G. D. McMurry	Dec.	21, 1870	"	Jan.	18, 1901	50 00	12 "	600 00
Roseland.	"	Public building.	D. Mackenzie.	Oct.	14, 1848	"	April	1, 1903	50 00	12 "	600 00
Vancouver.	"	"	A. Chisholm	April	18, 1851	"	Oct.	1, 1903	50 00	12 "	600 00
"	"	"	P. Powers	Mar.	21, 1836	Watchman	Feb.	10, 1901	50 00	12 "	600 00
"	"	"	C. F. Bosomworth	Oct.	1, 1848	Asst. caretaker.	July	7, 1904	50 00	12 "	600 00
Victoria.	"	New Dominion building.	Wm. McKay	Dec.	31, 1857	Caretaker.	Feb.	3, 1898	50 00	12 "	600 00
"	"	Dominion building	A. Johnson	May	12, 1858	Asst. caretaker.	April	1, 1899	60 00	12 "	720 00
"	"	"	R. C. Bradley	Aug.	13, 1843	Fireman	Oct.	1, 1903	45 00	12 "	360 00
"	"	"	J. McMillan.	July	8, 1876	Elevatorman	Nov.	27, 1898	60 00	12 "	720 00
"	"	"	Jas Parfit	Feb.	10, 1867	"	June	1, 1906	60 00	12 "	720 00
"	"	Old Custom-house.	Geo. Lyoll	"	12, 1843	Caretaker.	Mry	8, 1900	50 00	12 "	600 00

6-7 EDWARD VII., A. 1907

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at the Dominion Public Buildings, &c.—*Concluded.*

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time employed, each year.	Yearly Salary.
						\$ cts.		\$ cts.
Dawson	Post office	J. W. Wilson.	Aug. 18, 1873	Caretaker	Jan. 1, 1902	160 00	12 months	1,920 00
"	"	J. K. Johnston.	April 17, 1883	Nightman	Oct. 17, 1904	160 00	12 "	1,920 00
"	Post office.	Mrs. McKenzie.	April 2, 1878	Charwoman.	Nov. 1, 1905	150 00	12 "	1,800 00
"	Administration building.	J. H. Mulligan.	Sept. 9, 1865	Caretaker.	Dec. 1, 1901	160 00	12 "	1,920 00
"	"	J. Boutin.	Oct. 13, 1876	Nightman	" "	160 00	12 "	1,920 00
"	"	Mrs. A. Mianer.	Sept. 6, 1880	Charwoman.	1, 1901	150 00	12 "	1,800 00
"	"	Mrs. E. Hescock.	July 1, 1885	"	Feb. 18, 1903	150 00	12 "	1,800 00
"	Government house.	P. P. McDonald.	Oct. 8, 1879	Caretaker.	Dec. 1, 1906	160 00	12 "	1,920 00
"	Police court.	J. E. Deslauriers.	Mar. 23, 1873	"	Nov. 1, 1901	160 00	12 "	1,920 00
"	Court-house.	H. DeVilliers.	May 7, 1872	"	May 21, 1902	160 00	12 "	1,920 00
White-Horse.	Public building.	C. J. McLennan.	Dec. 22, 1850	"	Oct. 30, 1902	125 00	13 "	1,500 00

JOS. VINCENT.

OFFICIAL CORRESPONDENCE

DEPARTMENT OF PUBLIC WORKS

FROM

JULY 1, 1867, TO JUNE 30, 1906

OFFICIAL CORRESPONDENCE.

LETTERS Received and Sent from July 1, 1867, to June 30, 1906.

Year.		Received.	Sent.
1867—	From July 1 to December 31.....	2,075	1,511
868	" January 1 to December 31.....	3,498	2,317
869	" " " ".....	3,448	2,171
870	" " " ".....	4,961	3,185
871	" " " ".....	6,268	3,983
872	" " " ".....	8,333	4,428
873	" " " ".....	10,072	5,707
874	" " " ".....	9,800	5,043
875	" " " ".....	9,006	5,006
876	" " " ".....	7,971	4,773
877	" " " ".....	7,517	4,425
878	" " " ".....	6,886	4,021
879	" " to October 6.....	7,186	4,547
879	" October 7 to December 31.....	2,033	810
880	" January 1 ".....	8,451	4,411
881	" " " ".....	9,599	5,529
882	" " " ".....	10,506	5,699
883	" " " ".....	11,633	6,227
884	" " " ".....	13,114	6,903
885	" " " ".....	8,977	5,321
886	" " " ".....	9,644	5,352
887	" " to June 30.....	4,866	2,735
887	" July 1 1888.....	10,493	6,343
888	" " 1889.....	10,522	7,042
889	" " 1890.....	10,098	7,448
890	" " 1891.....	10,576	7,286
891	" " 1892.....	11,637	6,700
892	" " 1893.....	11,720	6,220
893	" " 1894.....	9,517	6,028
894	" " 1895.....	10,190	5,148
895	" " 1896.....	10,223	5,573
896	" " 1897.....	11,404	5,033
897	" " 1898.....	9,640	5,250
898	" " 1899.....	9,639	4,784
899	" " 1900.....	12,139	5,938
900	" " 1901.....	13,179	6,255
901	" " 1902.....	15,880	5,067
902	" " 1903.....	13,140	6,373
903	" " 1904.....	11,300	5,878
904	" " 1905.....	11,940	6,461
905	" " 1906.....	11,700	6,472

6-7 EDWARD VII., A. 1907

LETTERS Sent from Chief Engineer's Office, from January 1880, to June 30, 1906.

Year.	—	Number.
1880.....	From 10 January to 30 June.....	418
1880.....	July 1 " 1881.....	1,796
1881.....	" " " 1882.....	2,352
1882.....	" " " 1883.....	2,651
1883.....	" " " 1884.....	3,611
1884.....	" " " 1885.....	3,119
1885.....	" " " 1886.....	2,867
1886.....	" " " 1887.....	3,281
1887.....	" " " 1888.....	3,552
1888.....	" " " 1889.....	4,229
1889.....	" " " 1890.....	3,374
1890.....	" " " 1891.....	3,948
1891.....	" " " 1892.....	4,009
1892.....	" " " 1893.....	4,232
1893.....	" " " 1894.....	3,966
1894.....	" " " 1895.....	4,603
1895.....	" " " 1896.....	4,239
1896.....	" " " 1897.....	4,994
1897.....	" " " 1898.....	4,696
1898.....	" " " 1899.....	5,277
1899.....	" " " 1900.....	7,366
1900.....	" " " 1901.....	4,841
1901.....	" " " 1902.....	6,759
1902.....	" " " 1903.....	4,327
1903.....	" " " 1904.....	5,295
1904.....	" " " 1905.....	5,496
1905.....	" " " 1906.....	8,036

NOTE.—The letters, including returns, received in the Chief Engineer's Office may be estimated at the rate of two received to one sent.

LETTERS Received and Sent, Chief Architect's Office, from January 1, 1880, to June 30, 1906.

— 26	Received.	Sent.
1880— From January 1 to June 30..		1,273
1880 " July 1 " 1881.....		2,943
1881 " " " 1882.....		2,869
1882 " " " 1883.....	3,538	4,606
1883 " " " 1884.....	3,860	6,004
1884 " " " 1885.....	4,500	6,718
1885 " " " 1886.....	6,075	6,450
1886 " " " 1887.....	6,818	6,380
1887 " " " 1888.....	6,947	6,870
1888 " " " 1889.....	6,484	7,667
1889 " " " 1890.....	7,448	6,578
1890 " " " 1891.....		7,751
1891 " " " 1892.....	6,113	4,260
1892 " " " 1893.....	7,428	6,453
1893 " " " 1894.....	6,900	4,517
1894 " " " 1895.....	7,538	5,327
1895 " " " 1896.....	7,843	5,783
1896 " " " 1897.....	10,700	8,200
1897 " " " 1898.....	10,867	8,547
1898 " " " 1899.....	10,913	8,762
1899 " " " 1900.....	12,386	9,878
1900 " " " 1901.....	12,287	9,860
1901 " " " 1902.....	12,560	10,330
1902 " " " 1903.....	13,430	11,106
1903 " " " 1904.....	14,710	15,590
1904 " " " 1905.....	15,000	14,300
1905 " " " 1906.....	15,785	14,785



3 2044 106 515 000